

THE SOCIAL AND ECONOMIC
ASPECTS OF THE POPULATION
PROBLEM IN EGYPT

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A C K N O W L E D G M E N T S .

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No words can describe my indebtedness, or express my gratitude to Dr. M. Rankin, reader at Edinburgh University, for her technical help and guidance throughout my researches, and for the unsparing use she has allowed me to make of her valuable time and profound knowledge of the subjects forming the groundwork of this thesis. I can only hope that the matter here assembled and the manner in which it is presented reflect some of the interest that Dr. Rankin has taken in my work.

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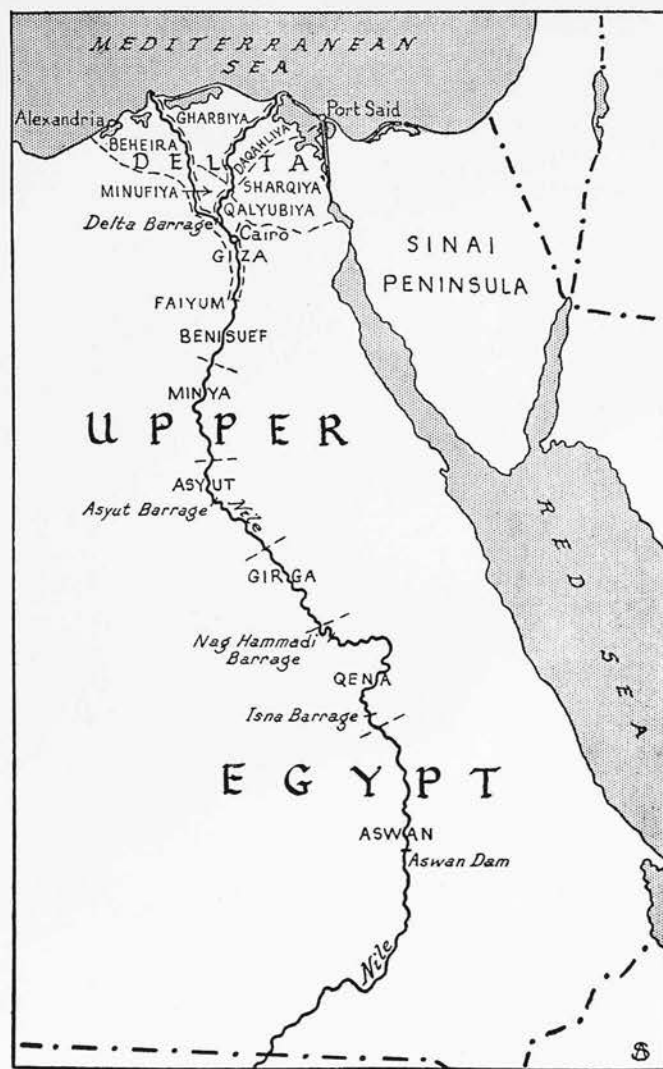
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EGYPT : GOVERNATES AND MODERATES

Fig. 1.

Preface.

Among most of the human race the balance of life is still maintained through substantially uncontrolled fertility and mortality, with population growth pressing on the means of subsistence.

The modern West only gradually made its transition from such wasteful reproduction to the efficient recruitment of life by means of low birth and death rates, and in the process multiplied its population several fold. Can to-day's under-developed regions achieve this vital transition without analogous growth; or alternatively can they support such growth while achieving the ameliorated living conditions necessary to accomplish the transition?

These are the main economic problems which confront Egypt to-day and which this thesis is intended to examine.

The idea of studying the population problem of Egypt began in 1940 when I was working as a social inspector in the Ministry of Social Work, Cairo. For three years I travelled throughout the country visiting each province at least once and made repeated visits to those remote villages scattered all over the Nile Valley from Alexandria northwards to Aswan in the south. These tours afforded me an excellent opportunity for first hand

observation and enabled me to become intimately familiar with rural Egypt, and also enabled me to see for myself how grievously the population is lacking in the means of subsistence.

As a result I became more than ever convinced that measures must be taken to awaken Egyptian public opinion. A scientific enquiry into the social and economic aspects of the problem seemed the best way of achieving this end. Since Dr. W. Cleland published the results of his own investigation in 1936 so much has happened and important changes have taken place in the structure, distribution and numbers of the population that new survey embodying these altered conditions is necessary.

The main body of the thesis falls into two parts; the first is mainly an analysis of the demographic facts and the prospects for the population growth. The second part is devoted to drawing a population plan for Egypt.

In the first chapter of the first part I have examined the importance of population studies in general and Egypt in particular. In the second chapter there is a review of what modern historians know about the numbers of Egyptians in ancient and medieval times down to the end of the 19th century. In the third chapter I have followed the discussion of numbers and distribution of inhabitants with an

analysis of the composition of the population. The important characteristics of this chapter are age, sex, educational and occupational status and religious affiliation or composition. The fourth and ^{the} fifth chapter are devoted to analysing the birth and death rate respectively showing the recent trends, the social and economic factors and their bearing on the birth and death rate. The question of over-population is dealt with in chapter seven with which part I of the thesis ends. Part II is wholly devoted to the economic and social remedies of over-population in which the present writer emphasises the importance of keeping a watchful eye on the rate of population increase in relation to our developed economic resources.

Faced with a rapidly expanding population and a much less rapidly expanding income many Egyptians as well as some foreign students of Egyptian affairs have recommended birth-control as a means of lightening the population pressure. Of course birth-control involves issues which go well beyond the economic field. Religious and moral, as well as political and social considerations must be taken into account. Some measures of birth-control is probably necessary in Egypt, but it must not be looked upon as a short-term or even medium-term solution of the population problem. Emigration is also examined in a separate chapter with special reference to

the places to which Egyptians could migrate. We also emphasize the need to bring more land under cultivation and to raise the productivity of the land already in use. The development of industry as an important element in the situation is also examined, but a careful consideration of the probable development in this field has led the writer to be less optimistic about what it may do to relieve population pressure.

Such then is Egypt's population problem. The various suggestions which will be analysed in the thesis may constitute a solution of that problem, but it is certain that their execution will tax to its utmost limits the energy and ingenuity of those responsible for the country's destiny. Egypt is facing a very difficult situation, and she needs all the sympathy and help of the outside world in dealing with it. For this reason I hope that this study may give a realistic picture to western readers of the importance of the population problem in Egypt and the huge task that has been imposed on our people and the agony of the present struggle. Meanwhile I feel that it is also important to let the people of Egypt be "population conscious", realise its supreme importance and understand the infinite ways in which it influences their life. They will then some day agree on its solution. To-day reasoning is opposed by emotion and conclusions

carefully arrived at are opposed by unexamined prejudices. The first step in the solution of our population question is to get over this stage of obscurantism and if this thesis makes any contribution to this result, my labours would be amply rewarded. It is also hoped that this thesis will prove of interest and value to the Egyptian authorities and will induce others to approach the same subject from their special angles; for we believe that it is a subject that must be seriously and urgently considered.

CHAPTER 1.

GENERAL DISCUSSION.

World and food resources - the political
issue - importance of Egyptian population
studies.

(1) World and Food Resources:

The question which now arises is that, can
the world food resources suffice for the needs of
the growing population? This is an important
question (especially for our study here) that has
received different answers. The pessimist and the
optimist see the world facing a famine after
this thirty years that food is the most basic

General Discussion.

Population phenomena touch at some point every phase of human experience and affect social and economic behaviour directly in numerous ways. For this reason population studies have received great attention in modern times, and their accuracy and the amount of detail they contain may be said to vary directly with the stage of development the country has reached. At present nearly every country with an orderly centralized government undertakes to carry out a census of its population at regular intervals. The figures thus produced may look dull and lifeless but in fact they are very much alive. When analysed by specialists they reveal a wealth of facts which are indispensable to the statesman, the politician and the economist. Thus, the population statistics are valuable not only in a local sense, but they also have a universal significance.

(1) World and Food Resources:

The question which now arises is this: Can the world food resources suffice for the needs of its growing population? This is an important question (especially for our study here) which has received different answers. The pessimist and the scaremonger see the world facing speedy disaster. This theory admits that food is the most basic

need, and accordingly land for food-production is the basic resource. Yet this is being dissipated - by erosion, by exhaustion of fertility, by faulty methods of cultivation - so that while the number of mouths to be fed has been steadily going up, the yield of food has actually been going down. And since the land area of the world is limited, and human food is derived, either directly or indirectly, from the land, it would seem that any growth in world population is conditional upon a corresponding increase in food production. If we assume that all available land has been ~~exploited~~ to the utmost in producing food, then any increase in population after that limit has been reached will result in a decrease in the individual's share of food, and this in turn will lead to famine, epidemics or wars, which will tend to keep the world population stationary or semi-stationary.

It was Malthus who first proclaimed this view towards the end of the 18th century, and thus drew the attention of the whole world to the importance of the population question and the need for their scientific investigation. He first states that there is a constant tendency in all animated life to increase beyond the means of subsistence. In the case of plants and animals, the population is restricted by want of room and nourishment, but, in the case of man, restraint from marriage is an additional

limiting factor, if this is absent or inadequate, a strong check on population arising from the difficulty of obtaining food will be constantly in operation. The force of this check is said to be obvious from the facts that population tends to increase in geometrical progression, while the means of subsistence cannot increase faster than the arithmetical progression. The ultimate check to population is seldom actual want of food, the immediate check being either "preventive" that is, restricting the birth-rate or "positive", increasing the death-rate. The preventive check is restraint from marriage, and the positive checks are unwholesome occupations, severe labour, exposure, extreme poverty, bad nursing, great towns, the common diseases, epidemics, wars, plague and famine. The preventive and positive checks tend to vary inversely with each other, and some of the checks are in constant operation with more or less force. Nevertheless there are few states in which there is not a constant effort in the population to increase beyond the means of subsistence, an effort which tends to prevent any great permanent melioration of the condition of the lower classes of society. Finally three propositions are laid down:-

- (1) Population is necessarily limited by the means of subsistence.
- (2) Population invariably increases where the means

of subsistence increase, unless prevented by some very powerful and obvious checks.

(3) These checks and the checks which repress the superior power of population, and keep its effects on a level with the means of subsistence, are all resolvable into moral restraint, vice and misery.

Nevertheless, those who agree with the general pessimistic theory of Malthus to-day admit that even if there were a resolution for the world's population problem even if soil fertility could be restored, and new land brought under cultivation, and the yields of old land raised, we could never manage to do this quickly enough or on a sufficiently grand scale to catch up with the alarming increase of humanity which modern technical and humanitarian trends are promoting. For the complete pessimists, the only remedy is to reverse those trends, at least in some of the major regions of the globe and once more let disease and infant mortality, premature death and famine take their heavy toll.

This is the pessimist theory; there are of course numerous less extreme variations on the theme but all agree in proclaiming the extreme gravity of the situation and its essential gloominess. The situation of Egypt could certainly come up here to illustrate the seriousness of a situation. As it will be dealt with in the next chapters its population is now 20 million; during a life time it has very

nearly trebled. For this reason its food situation is becoming a more and more serious problem. The recent famine and malaria epidemic of Quena province (1942-43) has focused the attention of all concerned with the production and distribution of food in Egypt on the great urgency of the problem. It was in fact symptomatic of the highly critical state of affairs which has now been reached in Egypt. Malnutrition and under-feeding are estimated to be already prevalent in about 30% of the population, while at the present rate of population growth - about 2 million every 10 years - there will be by 1960 some 2,500,000 persons and perhaps by 1970 at least 5 million more mouths to feed.

Coming again to our discussion on population and world resources we find on the other hand those who are optimists and are the ostriches as they are called by J. Huxley. These people believe that food can readily be made to outstrip all hungry pressure. Sir John Russell as President of the 1949 British Association gave a remarkable survey of the situation in terms of this optimistic theory when he said "My thesis will be that the way of mankind has always been and in all human probability will always be hard; that only by strenuous and well-directed work can our problems ever be solved; that we cannot foresee the difficulties and dangers we shall meet but we can train ourselves to meet

"them with courage, intelligence, and an unconquer-
 "able faith that we can overcome them. Science
 "and technology are necessary but not enough; there
 "must be a driving force and a conscious purpose
 "for which to strive; but given all these I am
 "convinced that man can conquer his difficulties as
 "they arise..." He also said "At the outset
 "I must emphasise the impossibility of setting any
 "limit to the world's resources. Estimates made
 "40 years ago are in most cases far below those that
 "would be made now. New advances in science
 "have opened up great and unsuspected possibilities
 "of new sources of energy, of more intensive food
 "production and of obtaining desirable materials out
 "of something previously regarded as useless. The
 "union of science and technology is so recent that
 "no one can forecast the results."

Thus we have two opposite ideas of the
 relation between population and world food resources - a forceful picture of the dangers of the
 situation to-day and an optimistic outlook with
 an account of what can be done to meet them. Yet
 there remains another important question which
 ought to be answered; can what is necessary be
 done quickly enough? That is difficult to say, for
 to secure the social progress all over the world,
 man must will it first, and also will the means;
 because we know that some are hesitating. However,

even their attitude towards the "Malthusian Problem" seems to have evolved. While it may appear formidable to some of them to-day, they are concerned less over the problem of increasing foodstuffs and other goods - as Malthus was - than over their distribution; less over the increase of the national income than over its distribution; less over the principle of a managed economy than the lines such management shall follow. The result may be a serious hindrance. However, we must remember two new elements. Men have always been more or less aware of the degree to which their essential needs were satisfied, because the maintenance of life itself and of their power to work under the physiological guardianship of specific sensations - hunger, the need for warmth and the need for rest. They have always appreciated roughly how far the society to which they belonged helped them to protect and maintain their lives. The new fact is that they can now measure the effectiveness of the aid given them. This is made possible by the existence of a number of great international institutions, based on science but themselves tending towards practical action, such as the International Labour Office, the Food and Agricultural Organization and the World Health Organization. Comparing their lot, men learn that a degree of social progress is possible, and they discuss the means of achieving it.

The other major influence has been born of two world wars and is probably one of their important consequences. The wars in question were what is described as "total" with scientists, workmen and farm workers playing as big a part as soldiers. Both of them demanded the mobilization of the whole national economy for the full use of all physical and human resources.

Between 1914 and 1918, and 1939 and 1945 modern nations for the first time got an effective grip of themselves, and, cutting out the element of chance, sought consciously and systematically to provide for the needs of their whole populations. The result was a series of large-scale and highly instructive social experiments. There were the British and Swiss experiments, for instance, and both succeeded. The fact that maintenance of the population and the armies by means of a rational diet was a condition of victory resulted in the United States deciding to increase its agricultural production by one-third, and achieving that increase in 2 years. In the midst of the war and despite the dispersion of families, the hasty evacuation of children, the bombing and the ever-recurring difficulties of food supplies Great Britain lowered the rate of infant mortality. Social problems had to be studied exhaustively; targets had to be fixed, means had to be thoroughly thought out, co-operation was needed

to attain success and had to be organised methodically. All this put the societies at war to a test which proved conclusive. It is now known that the rate of social progress will be what societies wish it to be. It is now under the control of mankind.

2. The Political Issue: The importance of population studies could also be explained from a political angle. An unfavourable relationship between population and natural resources creates a permanent menace to peace and a permanent menace to political and personal liberty. E.A. Ross⁽¹⁾ wrote in 1927 "there are good reasons for believing that, "whatever motives for aggression may lie on the "surface, the real enemy of the love of peace is not the eagle of pride, nor the vulture of pride, "but the stork". Cox⁽²⁾ finds that moral considerations disappear when men are brought up against the fact of hunger and thus concludes that war is the inevitable result of population pressure. In October 1945 C. Anderson, Secretary of Agriculture and chief United States Delegate to the Conference of the F.O.A. confirmed this view when he said "Hunger must be eliminated as a primary cause of war.

(1) E.A. Ross. "Standing Room Only?" p. 166 D. Appleton, Century Company, 1927.

(2) H. Cox "The Population Problems". G.P. Putnam & Sons, 1923.

"Two-thirds of the world's population was under-nourished, yet science and technology had advanced to such a point that the earth's agricultural resources could fill the need of all."

But do men always so react to hunger? Obviously not. In our days whether there is a threat to peace depends upon whether such an over-populated country possesses an industrial plant capable of producing armaments. There can be no aggression without the means to aggression. Lacking these means, the people of an over-populated country are confronted with only two alternatives. They can either stop breeding and so reduce the population; or else they can go on breeding until famine, disease, political unrest and civil war combine to raise the death rate to the point where a decreased population can re-establish a favourable relationship with natural resources. But some over-populated countries are also industrialized; and for these there is a third alternative, to enslave or exterminate their neighbours, and so acquire more land, food, raw materials, and markets.⁽¹⁾

Therefore, density of population alone gives no explanation for war, nor does population increase, because war is a complex culture pattern

(1) For a further discussion of population pressure as a factor in war see Warren S. Thompson, "Over-population and migration as causes of war", Miami University, Oxford, Ohio.

that must be backed by numerous rationalizations, rooted in historical traditions of the nation. It is also essential to make it clear here that it is not absolute poverty which measures the degree of population pressure as a danger to peace but the "felt" lacks, the felt pressure on resources, the felt discriminations in the access to the resources of the world. Perhaps it will help us to understand the role of felt population pressure as a cause of war if we draw an analogy between the struggle for a better distribution of national income in our own country and the struggle between nations for a larger share of the worlds resources.

Who are the people most aggressive in demanding a large share of our national income? They are not the poorest and the most poverty-stricken of our people. Those who are loudest in their demands and who are in a position to force and do force consideration of their claim for better living are the strong labour unions and well organised groups made of the more prosperous people who have already attained a substantial share of the good things of life and who are able to organise, to press their demands against the entrenched interests which oppose them. The situation is much the same between nations. It is those nations which have already made considerable progress in developing effective economic organisation, whose workers

have emerged from the dire poverty of mere subsistence and know something about the improvement in living they might gain if the resources of the world were more fairly divided, that are likely to take aggressive action to secure a large share of these resources. Only as the people of a nation become aware of their relative inferiority in resources and in national power can they be effectively aroused to support aggressive action against strong outside powers. People who have tasted some of the sweets of a more productive economy can be told with some show of reason that, if they had larger resources, more coal, more oil, more copper, more aluminium, etc....., they could live better. They can also be told and apparently convinced that in the world as it has been organised there is only one way to get these larger resources and that is to take them by force from other people now controlling them.

This is what happened in the Middle East in 1947. The people of Israel became more and more aggressive when they came to "feel" the pressure of population on resources far more keenly than those of Lebanon, Egypt or Syria, not because they are poorer but because they came to know more about world conditions and their relative poverty in resources and because they have been eating better and wish to eat still better and be even more secure in their food supply. Thus the population of Israel

have come to "feel" the lack of the resources from which they can make more goods far more keenly than other people in the Middle East who do not even know that most of these new goods exist, or that they might have a public health service, or that the chance to emigrate might improve their lot. It will certainly be some time before the other nations of the Middle East come to feel that aggressive military action might be to their advantage, but it would be extremely unwise to assume that they will not come to feel this way a few decades hence if they are kept from sharing justly in this exploitation of the worlds resources.

For this reason, the present writer believes that fundamental changes in the manner of life of the people of the Middle East will soon take place. In the course of a few decades these people will become aware of their position and perhaps cast covetous eyes upon the large unsettled areas in their own territories and elsewhere. As they come to know more about these conditions, they will also come to feel that the existing distribution of basic resources among nations is unjust and that if the European possessors are not willing to remedy this injustice voluntarily, recourse to force will be necessary.

It is clear however, that the population factor has a direct bearing on many, in fact most, social

and economic problems; thus it is one of many factors that must be understood in many comprehensive analysis of many social problems. Social scientists have been forced to recognise this fact since Thomas R. Malthus in 1798 published his famous essay on the principle of population as it affects the future improvement of society, for since then social scientists and public alike have been aware that a relationship exists between man's growth in numbers and human welfare.

Importance of Egyptian population Studies.

Having discussed the importance of population studies in general, let us turn to the particulars and examine the importance of the Egyptian population studies.

Few parts of the world present problems of such permanent and challenging importance to the student of population questions as are to be found in the great reservoirs of people in the Egyptian Nile Valley.

The political boundaries of Egypt include about 386,100 square miles, but over 95% of this area is barren desert. The country has aptly been described as a vast desert pierced by the Nile. The desert and the Nile not only describe the physical characteristics but also set the pattern of population distribution. Of the 19,087,857 persons reported by

the 1947 census, over 99% lived in the delta and the narrow and sharply defined strip of fertile land bordering the Nile, although the delta and the valley contain only 13,198 square miles, or less than 4% of the area within Egypt's political boundaries. It is therefore argued that - with some exceptions which are numerically if not qualitatively unimportant, nearly all parts of the Egyptian population are tied closely to the soil and are dependent in an extreme degree for daily subsistence and cash income upon the small-scale intensive cultivation of a few crops notably wheat, millet and rice.

It is the writer's opinion that nowhere are there more suitable natural conditions for observation and verification of the natural population theories, whether it be for the study of the positive Malthusian checks on population increase or of the effects of modern fertility and living standards, Egypt and India are prominently important for investigation. For, in recent times Egypt has seriously begun to experience what may be termed the pressure of population. And for a country so limited by nature to the narrow strip of cultivable land in the Nile Valley and Delta such a phenomenon may cause pardonable anxiety. For this reason it is argued that the co-existence and the mutual interaction of crowded regions, of subsistence

and cash-crop farming, and all other problems are to be seen more clearly in Egypt than in present day Europe or America.

Apart from the academic importance the population problem in Egypt is a matter of acute and increasing concern for all the statesmen and the moulders of national policy. With the advance of western ideas and techniques, it is no longer possible for authorities to allow the old forces of draught and famine to act as the crude regulators of population growth. Nor is it any longer easy for the spontaneous migration of peoples to emptier or richer regions to take place without infringing on powerful national interests. Tariffs, migration restrictions, and cost of colonization and transport all lead to thwart the clumsier natural methods of adjustment and to bring added pressure on the government to make population control or expansion a matter of positive policy.

Though few students of the problem will subscribe to the simplified opinion that extreme population growth automatically produces war, no careful observer of the very recent Middle East history can ignore the indirect but powerful influence of the increase in pressure of population on limited resources and barely maintained standards of living in the depressed rural population of Egypt as a force of fiercely political and military

disturbance. Nor, indeed does one need to be a Marxist to see behind the revolutionary movements of modern Egypt; the steady pressure of population increasing slowly against a stationary standard of rural productivity and, in the absence of an effective economic planning, aggravating the social oppression of landlords and money lenders.

Nevertheless, the unfortunate fact is that population problems in Egypt have received astonishingly little attention from research workers as compared with the amount of theoretical and field work devoted to the European and American areas. Measured by almost any standard - whether by available literature, research in progress, or teaching in universities - Egypt still occupies a most inadequate corner in the total yield of population study, and this despite the growing volume of source material that is becoming available in western languages.

It is greatly to be hoped that this defect can be remedied in the future, and even to-day there is a valuable field for study awaiting western students without an extensive knowledge of the Arabic language. Registration statistics of births, deaths, marriages, divorces... etc. are now available. Serious deficiencies still exist of course but there is much valuable work that can and should be started. For all its inevitable shortcomings, it will almost certainly prove more important and rewarding than

many of the limited regional population studies of the west, and more reliable and scientific than most of the historical inquiries into population problems of medieval and pre-industrial Europe or America.

CHAPTER II.

P A R T O N E

HISTORICAL GROWTH OF THE EGYPTIAN POPULATION.

Facts and their Interpretation.

Ancient Egyptian census - medieval Egypt - the
French occupation - Mohamed Ali - the growth of the
population since the middle of the nineteenth century -
accuracy of the Egyptian Censuses.

CHAPTER 2.

HISTORICAL GROWTH OF THE EGYPTIAN POPULATION.

Ancient Egyptian census - medieval Egypt - the
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population since the middle of the nineteenth century -
Accuracy of the Egyptian Censuses.

Historical Growth of the Egyptian Population.Population of Ancient Egypt:

Egyptians have been counted perhaps more times than any other people. When history dawned more than five thousand years ago, Menes, the first ruler of the unified state of Egypt, was already carrying out biennial and later, annual "numbering", a practice which was demanded then as now by a highly organized political system, and which the records show to have been followed more or less consistently by many of his successors.

But there is no accurate estimate of the population of Egypt in ancient times. All we have got are estimations, the accuracy of which depended upon methods used in their calculations.

W. Budge⁽¹⁾ in his book "Egypt" says that the population of Egypt in ancient times is not known, but some writers think that about 1500 B.C. it was over three millions and that a considerable number of the people in the Delta were of foreign origin, having come from Palestine and Syria and the maritime districts of the Mediterranean Sea.

Breasted, on the other hand, emphasized by the importance of census-making to the ancient Egyptians

(1) "Egypt" by E.A. Wallis Budge. p. 21.

but did not give an accurate estimation of the people at that time - he says: ⁽¹⁾

"Every two years a "numbering" of the royal "possessions was made throughout the land by the "officials of the Treasury, and these 'numberings' "served as a practical basis for the chronological "reckoning. The years of a king's reign were "called 'Year of the First numbering', 'Year after "the First numbering', 'Year of the Second Numbering' "and so on. An earlier method was to name the year "after some important event which occurred in it: "thus 'Year of smiting the Trogladytes' a method "found also in early Babylonia. But as the "'numberings' finally became annual they formed a "more convenient basis for designating the year, "as habit seemed to have deterred the scribes from "numbering the years themselves...."

As to registration the same historian ⁽²⁾ tells us that an elaborate system of registration was in force. Every head of a family was enrolled as soon as he had established an independent household, with all the members belonging to it, including serfs and slaves. His oath to the correctness of the registration-list was taken by a "Magnate of the "Southern Tens" in the land-office, in one of the

(1) Breasted "A History of Egypt" London 1906, pp.44-45.

(2) *Abid...* p. 265.

bureaux of the vizier's department where all this registration was filed. The office of the vizier was the central archives of the government, and all records of the land-administration with census and tax registration were filed in his bureaux.

Moreover in the reign of Mimmoon in 3340 B.C. his soldier Amenhotep threw a spotlight upon the events of these days when he made a census for the whole country and had it carved on his statue in hieroglyphics which we translate as follows:

"My liege the lord of the country and King of the
 "two regions, the North and the South, has shown
 "favour to me and ordered me in my capacity as the
 "senior of his recorders and head of his scribes
 "to carry out a census of all people. So I reckoned
 "the numbers of his soldiers and officers and of
 "those fit for military service; and I recorded the
 "millions and classified them according to age; and
 "I estimated taxes on dwellings and their occupants.
 "Nor did I fail to record my Lord's war-captives
 "and slaves⁽¹⁾..." At this point the carved lettering
 of this valuable historical text becomes obliterated.

Ancient Egyptian Censuses as an instrument of social control:

Throughout the ages, from the earliest recorded periods to the present time, the primary intent of

(1) "L'Egypt Contemporaine" Year 1936 - article in arabic by El Sayed Azmi.

the governments has apparently been to use these censuses - or registration systems - as a means of maintaining social control over the people. The governments were at all times interested in two problems - how to raise money and how to maintain order against both internal enemies or potential enemies. These two factors seem to have been the prime motives of all registration systems and censuses. The problem in its simplest form, boils down to the question - how can we keep track of every individual in the country so that we can call him up for military service, tax him, or apprehend him if he becomes a criminal? This may be an oversimplification of the situation, but the writer feels that it was the most important determinant.

It is clear that a population which has been enumerated only for the above purpose becomes wary of the registrar and the government which he represents. There is every incentive to avoid registration on the part of the masses, and practically no incentive to register.

The Romans carried out a census every fourteen years during their rule⁽¹⁾, and something roughly equivalent to a census in the form of tax lists was a regular feature of Roman rule as well as of

(1) T.G. Milne "History of Egypt under the Roman Rule", p. 241.

the Arab and Turkish dynasties.⁽¹⁾

But the fragmentary nature of the most ancient records makes it exceedingly difficult to discover the numbers of those days.⁽²⁾

Nevertheless Julius Beloch, writing in 1886, estimates the population of Egypt at the death of Augustus, 14 A.D., at 5 million; the area at 28,000 square miles. Based on the tax lists during Vespasian's reign, A.D. 69, the population has been computed at 8 million exclusive of slaves. Josephus quotes King Agrippa as saying about Egypt of the first Century A.D.

"This country is extended as far as the Ethiopians and Arabia the Happy, and borders upon India. It hath 7,500,000 men, besides the inhabitants of Alexandria, as may be learned from the revenue of the poll tax."⁽³⁾

Medieval Egypt.

During the period of the Arab rule⁽⁴⁾ there was

(1) S. Lane-Poole "History of Egypt in the Middle Ages", 1907, pp. 16-25.

(2) Diodorus Siculus, writing in the first century B.C. gives the population of the Egypt of the Pharaohs as 7 million and of his own period, the Ptolemies, as something over 3 million. Also Julius Beloch writing in 1886 estimates the population of Egypt at the death of Augustus, 14 A.D., at 5 million.

(3) W. Cleland "The Population Problem in Egypt" 1936 Science Press - U.S.A.

(4) In 639 the Arabs invaded Egypt - by Amr Ibn Asi.

a great difference of opinion regarding the population of Egypt. This was perhaps due to the fact that the historians of the period did not pay much attention to this matter.

With the exception of the information recorded by Ibn el Gian in his Book "El Tohfa Sania" there is nothing to throw a glimpse of light on the economic state of affairs before his period. Even El Magrizi himself with his varied studies and observations on the mode of life during that period did not leave behind any dependable knowledge in this direction. (1)

Nevertheless, there are various estimations of the population of Egypt at the time of Arab rule. (2) But these were greatly exaggerated. This exaggeration might possibly be due to the desire of Arab leaders to increase their budget and their failure to differentiate between the income derived from the levy imposed upon the non-Moslem adults and the income derived from taxation on arable lands.

We find that Ibn Rifad, at the beginning of the Arab rule, estimates the population of Egypt at 14 million, while another historian of the same period estimates it at 20 million. (3) It is impossible to believe the last figure to be an accurate estimate

(1) "The Economic Condition of Egypt during the Fatamides" Cairo 1948, in arabic - page 28. Dr. Rashid El Barrawi.

(2) See Lane-Poole "History of Egypt in the Middle Ages" 1901 pp. 15-25.

(3) Abid., Dr. Rashid El Barrawy.. "The Economic of Egypt during the Fatamides" Cairo 1948 in Arabic language page 32.

of the population at that time, when we know that in 1947 the figure of 19,087,857 was recorded. Taking into consideration that since the eighteenth century Egypt has been making great progress in irrigation. This has increased productivity, raised the standard of living and abolished famine; it is therefore impossible to believe that the population is smaller to-day than it was during the Arab period.

Yet an estimate of the population based upon the tribute paid to the Arab administration in the 7th century A.D. gives a figure in the neighbourhood of 12,000,000. And some competent writers, while suspecting this to be a little exaggerated, are willing to admit that Egypt in the 7th Century harboured a larger population than she did in the latter half of the 19th century.⁽¹⁾ Travellers in Egypt during the 18th Century remarked on the frequency of plagues, the neglect of irrigation and agriculture and the general lawlessness prevailing as a result of Mameluke rule.⁽²⁾ It is not surprising therefore, that at the beginning of the 19th century according to the French Scientist it was less than a quarter of its estimate at the time of the Arab conquest.

(1) "L'Accroissement de la Population de L'Egypte" by M.A. Boinet Bey, Bulletin de L'Institut d Egypte, No. 7, 1866, p. 272.

(2) See Volney "Travels through Egypt and Syria" 1788, Vol. I pp. 49 192-3, 256.

The French Occupation.
1798-1801.

The first attempt at an estimation of the population of Egypt in modern times was made during the French occupation of the country.

On his brief expedition to Egypt, Napoleon was accompanied by many distinguished French servants. One of them, Monsieur E. Jomard undertook the task of estimating the number of inhabitants of the country in 1800. This was not a proper census, but it was a detailed study of the province of Minya as circumstances allowed the French Expedition. From the data thus obtained they formed conclusions which they applied to the rest of the country.⁽¹⁾ Thus, in the first place, four classes of settlement were recognised:-

1. Towns, with a population of over 3,000
2. Small towns, from 1,000 to 3,000 inhabitants.
3. Villages from 300 to 1,000 inhabitants.
4. Nazlas, Hamlets and Kafirs etc. with less than 300 inhabitants each.

And, in considering the population of the whole country, the village population was estimated separately, then the population of town and provincial capitals, and finally that of Cairo.

In their study of Minya, the French asked the sheikh of each village to furnish the number of the male inhabitants of his village. From that figure

(1) "Description de L'Egypt" Vol. 15 page 118.

the total number of village inhabitants was calculated on the assumption that the ratio between females and males was 4.3.

In Minya, the enquiry produced the following data:-

Kind of settlement	Number	Population.
Towns	2	11,750
Small Towns	39	53,230
Villages	63	30,820
Nazlas, Hamlets, etc.	<u>57</u>	<u>8,850</u>
	161	104,650

Excluding the two towns - which were Mal Lawi (7,000) and Minya (4,750) - the population would be 92,900 for 159 villages of all sizes. In their survey of the whole country the French counted 3,554 villages. A round figure of 3,600 was adopted allowing for some 46 settlements to have escaped their notice. This multiplied by the average figure of 584, resulted in a village population for all Egypt of 2,102,400.

Next came the towns, excluding Cairo. In 1800 there were 18 towns with a population of more than 3,000 each. These were:

Town	Population	Town	Population.
Damietta	20,000	Giza	3,000
Rosetta	15,000	Beni Suef	5,000
Alexandria	15,000	Atfih	4,000
Mahala	17,000	Minya	4,000
Mansura	7,500	Mallawi	7,000
Tanta	10,000	Asynt	12,000
Minuf	5,000	Girza	7,000
Qualyoub	4,500	Qena	5,000
Bilbeis	3,000	Fayoum	5,000

The total town population was thus 147,750; which added to the village population, gave the figure of 2,350,150 representing the population of Egypt without Cairo.

Cairo itself had a population of about 260,000. This figure like the previous ones, was also the result of inference rather than of real census. If we add the population of Cairo thus obtained to the figure for the rest of Egypt, we get a total population for the whole country of 2,⁶510,000. And in spite of the obvious defects of the methods by which this figure was obtained, later estimates and censuses, as we shall see, incline us to accept the French figure, roughly ^{2.5}25 million, as a reasonable estimate of the population of Egypt at the beginning of the 19th Century.

Mohamed Ali. (1)
1805-1849.

(1) The viceroy of Egypt at the time and the founder of the present monarchy.

Thus estimates of the population were attempted during the reign of Mohamid Ali, one in 1821 and the other in 1846.

In 1821 Mohamed Ali estimated the population of Egypt at 2,536,400. This estimation was based on the principle undertaken by the French servants, i.e. the number of houses. The direct motive behind this undertaking was his desire to impose new taxation to meet the needs of his expanding armed forces and other recruitment purposes.

In 1846 another estimate of the population still based on a census of houses gave 4,476,440. This time it was much more systematic than that in 1821.⁽¹⁾ Comparing the 1821 figure of 2,536,440 with that of 1846 we find a substantial increase which works out at an average rate of 3.37% per annum.

This increase is all the more remarkable if it is remembered that from 1820 to 1840, a large proportion of the young men of the country were away from their families, serving in the armies, navies or factories of the Pasha, and moreover, that Plague⁽²⁾ and disease carried off large numbers

(1) A third census was reported to have taken place in 1873. The circumstances of this census were not given. (See *Annuaire Statistique de L'Egypte* 1937-39 p.10)

(2) There was an epidemic of plague every 10 or 11 years - in 1813, 1824, 1835. In 1835 the plague carried off one quarter of the population - some 800,000 persons (see Crouchly "The economic development of modern Egypt" page 51.)

every year. Smallpox was virulent and killed a great part of the infant population.

Up to 1840, the highest estimates of population did not exceed 3,500,000. It thus appears that there was a rapid increase after 1840. This is probable, in view of the return of the soldiers and workers to their homes, and the lightening of the burdens upon the people, as Mohamid Ali's campaign for independence came to an end, and his monopoly system and industrial experiment were likewise terminated.

The drain on the population for service in the army, the factories and corvee was very considerable. The army of fellahin built up after 1820 increased from 19,000 men in 1823 to 90,000 in 1826, and 200,000 in 1840. A further 20,000 men were in the Navy and another 30,000 in the state factories. In 1819, 300,000 men were corveed to build the Mahmoudia Canal. Clot Bey estimates that after 1825, 355,000 men were employed for 4 months every year in digging out the canals and other irrigation works. Between the corvee, the army, the factories and the plague, one wonders how the agricultural work was done at all. In fact travellers of the time have left on record that in travelling through the villages in the spring there were no able-bodied men to be seen - nothing but women and children and old men.

Two striking aspects of population in this period are worthy of note. In the first place the population of Alexandria passed from some 15,000 in 1800 to 143,000 in 1848. (Cairo in the same period passed from 260,000 to 253,500).

Secondly, there was a notable increase in the foreign population, particularly in Alexandria. At the time of the French invasion, there were probably not a hundred Europeans in Egypt. During the reign of Mohamed Ali, however, there was a large influx of foreigners. Many of them brought to Egypt by the Pasha himself, to serve in his factories, his army and navy, as doctors, engineers, surveyors etc. A great many of these were French. Others came in the wake of the great commercial development. After 1820, English, French, Austrian, Swiss, Greek and other business houses were rapidly established. As the sales of agricultural produce for export took place in the government warehouses in Alexandria, most of the foreign merchants established themselves in Alexandria, round the Mohamid Ali square.

The Growth of the Population of Egypt since
the middle of the 19th Century.

The first census in modern times which could be regarded as fairly accurate was that taken in 1882. It was followed by that of 1897, and since then at regular intervals for 10 years. The following

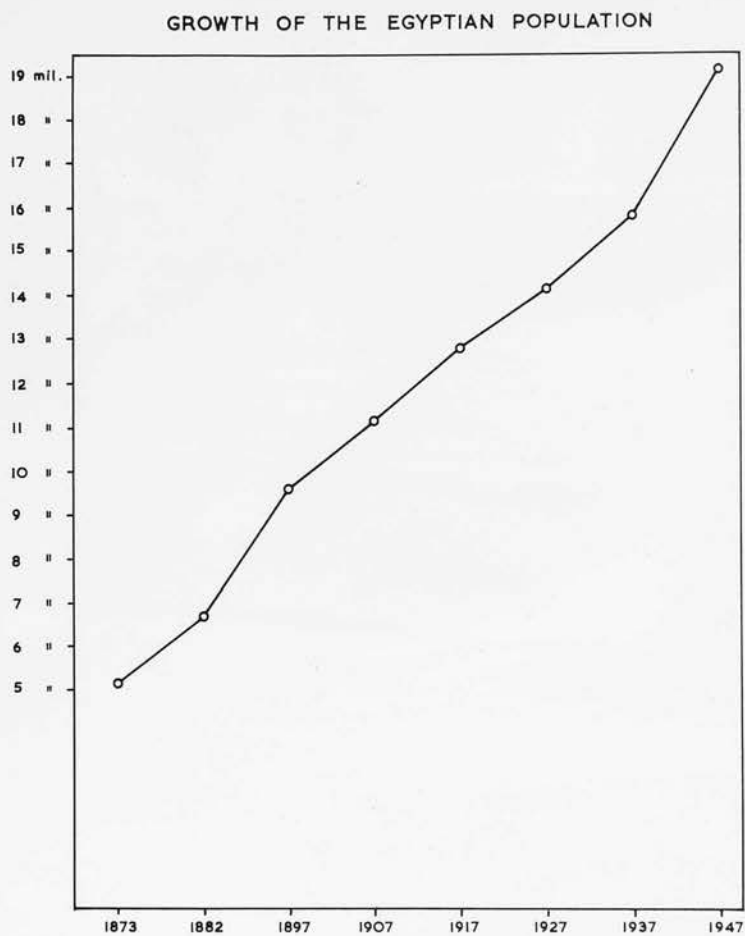


Fig. 2.

table gives the total population of the country according to these census returns:-

Year	Population	Inter-censal increase per annum.
1873	5,250,000	2.05
1882	6,705,825	3.08
1897	9,634,752	2.9
1907	11,189,978	1.6
1917	12,718,255	1.4
1927	14,177,864	1.7
1937	15,920,694	1.2
1947	19,040,448	1.96

Table 1: The increase in Egypt's population.

The striking feature of the above table and chart is the steady decline in the rate of increase from 1873 to 1917, after which date the rate becomes more or less stationary for two decades, to rise sharply again in the last interval. This early fall in the rate is not surprising, in view of the fact that the resources of the country were not developing at the same rate as the population. Between 1897 and 1927, for instance the addition to the cultivated area amounted to only 10% while the population increased by 65%⁽¹⁾.

(1) In 1897 the total cultivated area was 5,087,000 feddans compared with 5,543,000 feddans in 1927.

The crop area, however, was 25% more in 1927 than in 1897⁽¹⁾ and as a large proportion of this was devoted to the relatively high-priced commercial crop of cotton, the above addition to the population was absorbed without a suggestion that saturation point was reached.

A more detailed study of the census returns will reveal the following facts:

- 1) Whenever perennial irrigation was introduced into an area, the rate of population increase in the area would go up, and stand at a point above the average rate of population growth for the whole country. This is generally counter-balanced by a decrease in the rate in areas where no irrigation improvements have taken place.
- 2) After the lapse of about 50 years the areas that showed a higher rate of increase relative to the country as a whole either continue to grow in population, but at a rate lower than that for the whole country, or show signs of having become stationary. In some cases, even, an absolute decrease has been recorded. If some of them continue to grow at a higher rate, this will almost certainly be accompanied by some kind of industrial

(1) 8.6 and 6.8 million feddans respectively.

development or scheme of land reclamation.

3) In the latter half of the 19th Century and the early years of the 20th, the rate of increase in rural areas was equal to, or a little higher than, that of urban centres. Then the position is reversed: since 1907 urban centres have been growing at a much higher rate than rural areas.

The inference to be drawn from the above facts is that the vertical expansion in agriculture which resulted from the introduction of summer irrigation absorbed the greater part of the growing population; but this could continue only for a time, and after a balance was struck between the labour requirements of the land and the total inhabitants of a given area, any increase above the latter would be over and above the capacity of the land and an outward movement of population from that area would soon set in.

The census of 1882 (6,705,825).

The first proper census was taken in 1882, immediately after the British occupation of the country. It was for the first time in the history of Egypt - as far as is known - that an actual enumeration of every citizen was attempted on a single day. As was to be expected however, the results of this census were not very satisfactory. This can be attributed to the prevailing conditions

of the country in those days⁽¹⁾ The inhabitants also were ignorant of its real purpose. The unfamiliarity with its procedure must have made them reluctant to co-operate with the authorities undertaking it. Despite these unfavourable conditions, however, the government found it worth their while to take it. In the works of Monsieur A. Boinet under whose supervision the 1897 census was taken "The operation (of the 1888 census) did not meet with such hostility as might have been raised to it by a population unaccustomed to administrative measures, the true purpose of which escaped their knowledge. The inhabitants, in spite of prejudices, carried out their share in the census operation with docility if not with cheerfulness."⁽²⁾

(1) At the date set for the census, (May 3) Egypt was in a very disturbed condition. The Egyptian army had been in open rebellion for over a year, aiming to expel Turkish and Circassian officials including the Khedivial family. 48 persons among whom were some of the highest officers of the Turkish Sultan, were under sentence of exile to the Sudan for an alleged plot to poison the rebel leaders, a sentence which the Khedive was refusing to confirm. Popular sentiment seemed to be supporting the rebellious army and taking a fanatical religious turn, so that all foreigners and native Christians were in fear of their lives.

(2) See Monsieur A. Boinet's article "L'acroissement de la population de L'Egypte" in the Bulletin de L'Institut d'Egypte No. 7, second series. Q. in El Darwish L Azmi p. cit, p.44 "Population" February 1934. "L'Egypte Contemporaine".

The Census of 1897 (9,634,752)

The second proper census was taken in 1897. The conditions under which this census was taken were far more favourable than those of the preceding one. There was an increase of about 3 million persons, a substantial part of which was fictitious and due to improved enumeration. It was conducted by Boinet the assistant Financial Adviser to the Egyptian Government.

The Census of 1907 (11,189,978)

At this time the country was progressing rapidly and its inhabitants were getting more and more familiar with such administrative undertakings as a census. There is no doubt that the results obtained were much more trustworthy than those of the preceding censuses, and many questions were added to its schedule to widen its scope. This census also calls attention to the extraordinary rate of increase between 1882 and 1897 - a year of normal conditions - and suggests the explanation that there must have been a great many persons not counted in 1882.

The Census of 1917 (12,718,255)

Equally unfavourable for census taking were the conditions prevailing in 1917, owing to the first World War. Although Egypt did not actually participate in this war as a belligerent, many

thousands⁽¹⁾ of young Egyptians served during the war in Palestine in the so-called "Labour corps". All over the country there was a widespread suspicion that the census was taken for the future recruitment for the army. A census taken in such circumstances could not have been popular.

Yet many improvements were introduced in the technique of the census taking. The central administrative authority undertaking it was re-organized and equipped with all the latest machinery for that purpose. All calculations and tabulations were carried out by machines instead of by hand. Greater accuracy in the results obtained were thus achieved. Detailed records of all the difficulties and experiences of the census were filed for future reference. A few more questions were added to the census schedule in order to shed some light on certain important topics.

Among the outstanding improvements of the 1917 census was the introduction of inquiries concerning the nature of domiciles and the number of rooms in occupation. Unfortunately this important item disappeared from the schedule of the 1927 census. Thus we were deprived - at least

(1) The number is estimated at 10,000.

for 10 years - of valuable data bearing on the question of over-crowding and housing conditions in the country. The same inquiry however, was re-introduced in a modified form in the 1937 census schedule.

The 1927 Census: (14,217,804)

The 1927 census was taken on the same lines as that of 1917. Yet many improvements were introduced which were made possible by the experience gained during the intervening period. But the most important contribution of the 1927 census was the introduction of a question concerning the nature of the trade or industry of the individual concerned.

As we have seen before the census of 1917 disclosed a population of 12,750,918 as compared with 14,217,804 at the census taken on February 1927. The increase of population is almost entirely the result of its natural growth during a period free from destructive epidemics - except in 1918 - when an Influenza epidemic spread all over the country and caused the natural increase (births over deaths) to be a small negative quantity, in other words deaths slightly exceeded births. Also it was a period of considerable agricultural prosperity. Although we have no means, at present of gauging the net result of migration, it is likely to be very

small. Emigration of the natives is almost non-existent, while the net result of migration among the foreigners is practically nil, since the number of foreigners disclosed by the last two censuses was almost the same and amounted to 225,000 persons.

Therefore, during the last decade, the Egyptian population may be regarded as a community which had been undisturbed by emigration or immigration. Moreover, it can be seen from the minority of foreigners, that the Egyptian population on which the present investigation is made included an overwhelming proportion of native lives and may be considered, for all practical purposes, as consisting entirely of native Egyptians.

The 1937 Census: (15,920,694)

The 1937 census introduced many new and significant enquiries. It re-introduced the questions concerning the nature of domiciles. Furthermore five enquiries were added. These were, habitual residence, the number of persons dependent on the gainfully occupied members of the household, the length and cause of unemployment, deformity and finally the date and nature of educational qualifications.

The 1947 Census:

As far as the present writer is aware the full details of this census are not yet published; and we have at present the total, which at 19,

seems a little exaggerated. But for any error it is the nation rather than the census officers that must be blamed. It was the first census after the one held during the war for the purpose of fixing food rations. The public mind, therefore, associated the new census with food rationing and returned fictitiously high numbers accordingly. On the other hand a certain fraction of the population desiring to screen their offspring from military service, will have given false returns in the opposite sense. We shall probably be right in presuming the above total to be on the high side.

Accuracy of the Egyptian Censuses.

Testing the accuracy of any census is extremely difficult. Normally there is no other standard by which its accuracy can be tested. Any census is a standard by itself. In some cases, however, certain discrepancies or inconsistencies with the results of other censuses could be pointed out. A comparison of age returns, for instance, might disclose obvious inaccuracies. Whereas testing the accuracy of some census returns is feasible determining the degree of their inaccuracy is practically impossible. The best we can do is to hint at the causes of their unreliability and thus caution their users against being unduly

confident in the material handled.

In Egypt, there are many factors which are likely to affect the reliability of census returns. In certain respects the Egyptian people appear to be actively opposed to census taking; in other respects they appear to be indifferent. These attitudes unfavourable from the census-taking viewpoint, do not necessarily make it impossible to take at least a fair census; They simply make it that much more difficult. Indeed, many of these attitudes, plus the prevalence of illiteracy, are undoubtedly found in other countries, such as India, Malaya and Java; where, notwithstanding, fair censuses have been taken. If the other factors which have combined to produce poor population statistics in the past in Egypt can be minimized, it should still be possible to compensate, in part at least, for the antagonistic attitudes of the people.

The vast majority of the country's inhabitants are illiterate. They cannot read the authorities' instructions on the matter. Enumerators must help the fellahien (the Egyptian peasants) to understand what is required of them. Nothing can be answered in a confidential manner as it is a stranger who has to write down the answers. Moreover, it is difficult to convince the masses of the solidarity between public and private interest in taking a census. The country suffered from the misgovernment



of the Turks for centuries. Suspicion of any government measure is widespread even now. The ordinary peasant sees only one purpose for a census; namely to enable the central government to tax him or to recruit him for some arduous task. He refrains from answering the questions but if he is threatened by punishment he gives erroneous answers to mislead his enquirers.

Thus, the effect of illiteracy is to render less accurate the information which the people give to the enumerator. Accurate size of agricultural holdings, accurate description of occupation, earnings, etc. - all are difficult to obtain from an illiterate population even if the people are willing to co-operate with the enumerator.

The attitude of the people towards the census-taking are also closely related to their extreme poverty. Poverty focuses the attention on food instead of statistics. The majority of people in Egypt are not interested in vital statistics but in things which would materially help them, such as food, clothing and money.⁽¹⁾

The influence of superstition is sometimes an

(1) Some idea of the poverty of the population will be illustrated in the coming chapters.

important factor in the inaccuracy of the censuses. It is sometimes felt that bad luck or even death will result from giving the names and birth dates of family members to an outsider such as the census taker. (1)

The reporting of women, especially the unmarried also appears to be influenced by the attitude of the masses. The fellahs of Egypt sometimes omit mentioning as far as possible their women folk, especially when age and names have to be reported. These particulars about women are not supposed to be known outside the family according to the Islamic traditions.

Nevertheless, the strength of these attitudes probably varies among the different sections of the population; and apparently, investigators who take elaborate pains to enlist the support of the villagers are able to overcome in part at least, these attitudes.

(1) It is safe to say that in Egypt the under-reporting of young children occurs more for females than for males. The chief reason is that the females have a lower social status than males. In some parts of the country there is always a tendency to under-report children under 3 years of age (because such children are not treated as human beings for fear the evil spirit will cause them harm during the very early ages.) In some parts of the country the people still feel that male babies are more important than females and do not report them for fear that something might happen to them.

Significance for the future:

On the basis of the previous analysis of Egyptian society and census procedures the writer makes the following recommendations as essential if a satisfactory census is to be taken in the future.

A uniform census schedule and uniform and detailed census procedures should be employed throughout the nation. Such a schedule and instructions can be adopted with comparatively little change from that of practically any nation advanced in the method of census taking. Even the census procedures for such an industrialized nation as the United States can probably be used with but relatively little modification.

Emphasis should be laid on determining the characteristics of the population rather than simply that of measuring its exact size. Trained enumerators are then required, thus permitting the selection of higher calibre personnel both for field and office work. A smaller number of people can also be more intensively trained than great numbers; better trained persons will bring in more uniform and better quality data.

Because of the attitude of the people towards census taking in general, it would seem to the writer that very special efforts will have to be made to ensure the co-operation of the people.

These efforts may include the following. To begin with, the census should be taken under the auspices of the central statistical ⁽¹⁾ authorities with the aid of the universities and the local school teachers. The police should have nothing whatsoever to do with the enumeration.

Considerable time should be spent in each area preparing the people for the census and attempting to win their support. Perhaps six months educational work would not be too much. It is evident that any attempt to take a census without adequately preparing the people (especially the illiterate) is doomed to failure.

Also the use of fictitious names should be permitted. Thus, for example, if a family refuses to divulge the name of an unmarried daughter, a request should be made only for the characteristics of that person, and the identifying name omitted.

In schools and colleges students must be told the benefits of a reliable census. They are asked to explain the matter to their parents and relatives. In chief towns all over the country

(1) The present "Statistical and Census Department" (annexed to the Ministry of Finance) was created in 1907. Before this date - with the exception of a brief period between 1882 and 1883 - an office used to be improvised for the purpose of handling the data collected and for publishing the results. These offices used to be liquidated after every census.

meetings should be held to which everybody, particularly peasants from the neighbouring villages should be invited. In these meetings they would be told about the census, and asked to co-operate by giving accurate information. In small villages mosque "sheekhs" (local priests) should be asked to refer to the subject in their weekly after-praying talks.

Such determined efforts are bound to be fruitful in the long run.

CHAPTER 3.

THE COMPOSITION OF THE POPULATION.

Age composition - sex composition - occupational status - educational composition - religious composition.

Introduction.

In this chapter we are going to deal with the composition of the Egyptian population from five different points of view - sex, age, occupation, education and religion.

The first marks a natural differentiation of people in terms of reproductive propensities; the second is a crude index of the stage reached in life cycle; the third has to do with the work of the people; and the last two deal with the cultural standard of living. In most populations the normal ratio of the sexes is distributed by one or more factors in nature or in social experience so that there is no complete matching of pairs, nor is a normal proportion of age groups to be found. Changes in the birth rate, age selective migration, age selective death rate, and other factors are constantly at work to disturb the standard age ratios. Age and sex composition shift ratios significantly in the total population of the nation; much more marked, however, are composition changes in local areas. Such changes in population composition affect all social institutions, from the school system to marriage, and many phases of social and economic interaction. Nationality and racial make-up of people derived through the accidents of history affect the social relationships, the social rate and in a measure the vital traits of a population.

1. Age Composition.

The structure of age distribution in Egypt is - and for many decades will continue to be - an extremely young population, in the sense of having a large population of children and younger adults (see chart) 3

Table 2 and 3 also list the age distribution in two forms; the first divides the population into age groups; minors, middle aged and aged.

Age Groups.	Number		Percentage.	
	1927	1937	1927	1937
Below 1 year.	492,951	490,177	3.5	3.1
1 - 4	1,537,744	1,617,397	10.8	10.2
5 - 9	1,859,391	2,208,837	13.1	13.9
10 -14	1,579,878	1,909,103	11.7	12
15 -19	1,294,841	1,346,257	9.1	8.5
20 -29	2,326,143	2,414,438	16.4	15.2
30 -39	2,001,223	2,333,483	14.1	14.6
40 -49	1,316,385	1,605,316	9.3	10.1
50 -59	800,819	944,771	5.7	5.9
60 -69	578,072	518,980	3.7	3.6
70 -79	258,443	279,708	1.8	1.7
80 -89	111,366	113,781	.8	.7
90 and over	40,303	42,933	.3	.3
Not stated	39,397	37,421	.3	.2

Table 2 : Distribution of population of Egypt by age groups 1927, 1937.

Age group	Percentage.	
	1927	1937
Below 15	38.6	37.3
15-60	54.8	54.4
Over 60	6.6	6.4

Table 3 : Distribution of the three functional age groups in 1927 - 1937.

PER CENT. OF THE POPULATION UNDER THE AGE OF 15
AND OVER THE AGE OF 65 IN SELECTED COUNTRIES

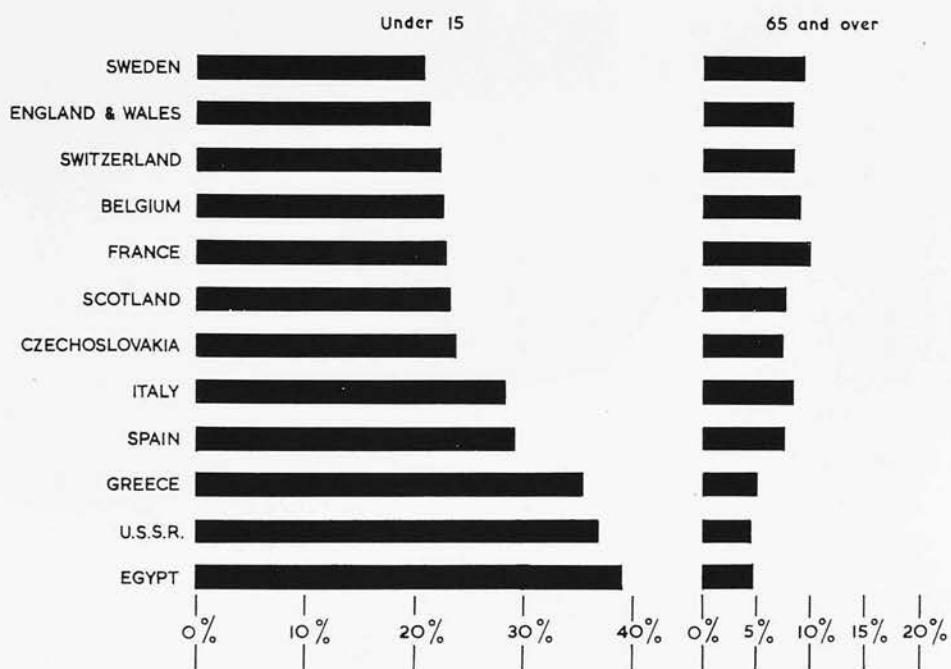


Fig. 3.

We notice from Table and chart that the decrease in the Egyptian age pyramid is most pronounced in the younger ages, because of the high mortality rates of infants and small children. After the dangers of early childhood are passed the low mortality rates of adolescence and early adulthood are reflected in the diminished rate at which the pyramid narrows, and this will be continued until the advanced ages. The incidence of high mortality rates exerts a severe pinching effect and rapidly narrows the figure near the apex of the pyramid.

In other words the relative smallness of the population over 60 in Egypt is due to the fact that they were exposed in their early years to heavy rates.

But the age structure of Egyptian population can be well illustrated if it is compared with that of England and Wales. — *Table 4 and fig 4.*

Age Group	Percentage.	
	Egypt	England.
0 - 15	37.3	21.2
15 -65	56.6	68.3
65 and over	6.1	10.5

Table 4 : Percentage of age groups (England - Egypt)

Observation on the previous table and chart bring out the principle ways in which the age profile

PER CENT. DISTRIBUTION BY BROAD AGE GROUPS
OF THE POPULATION OF ENGLAND AND WALES
AND OF EGYPT

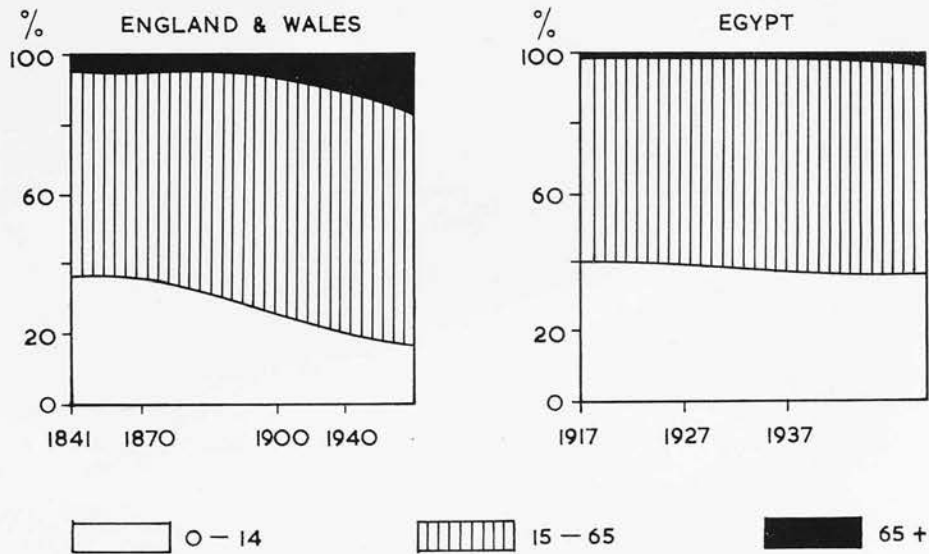


Fig. 4.

of Egypt's population differs from that of England. Egypt's population pyramid is squat and its age structure has a much greater concentration of population in the age groups under 15 years. On the other hand she has a comparatively smaller percentage in the ages from 15 to 55 and a smaller percentage in the ages over 65. These differences in age composition are due to differences in emigration, differences in fertility and mortality, or more likely to a combination of these factors. When the mortality rate and the fertility rate both remain very high over a long period of time, the population pyramid inevitably must become less squat, and these two factors operating in conjunction are certain to concentrate the population in the younger ages of life.

Thus we may conclude that (1) Egypt has a larger proportion of young persons. (2) It has a relatively smaller proportion of able-bodied men and women, and also (3) a smaller proportion of old people.

This means that we are handicapped by the age composition of our people; because we have a larger proportion of children and both a smaller proportion of persons in the working age and a shorter period of working life available to each person who reaches that age. Out of the first result comes the greater need for child

welfare work and the greater difficulty to improve the standard of primary and secondary education; and the low percentage of economically active population which leads to a lower per capita income among its labour classes.

From the standpoint of age composition alone, it might be thought that the most desirable condition for Egypt's population policy is a high proportion of adults in the prime of life. On a per capita basis such a population should have a low death rate, a high productive capacity, few children to educate and elders to support, and consequently high average living conditions in terms of goods and services. This is unlikely to arise except as the result of a rapid fall in births following a rapid rise, or as a result of a large migration of young adults into other parts of the world.

Yet if we take the broader view, and keep in mind the relation between age composition and the rate and source of population increase the most desirable age for Egypt may be that of a population being maintained at the numerical optimum chiefly by the difference between births and deaths, or approaching optimum size by this method and at a desirable rate.

Whether this is true or not involves the comparison of the advantages of maintaining or approaching numerical optimum with those of deviating

from it at varying rates with corresponding effects on age composition. The advantages of certain types of age composition should be considered carefully in studying the best rate of increase or decrease for approaching optimum size, for they may prove to be among the decisive factors.

2. Sex Composition.

The balance between the sexes in Egypt is another important aspect of its population structure. The birth-rate, the death-rate, the marriage rate, the magnitude and direction of migration etc., are all significantly affected by the proportions of males and females i.e. the sex ratio of the population.

In the following table there is a comparative study of the sex ratio - Egypt included.

Country.	Sex Ratio	Country	Sex Ratio.
1. <u>Africa.</u>		4. <u>S. America.</u>	
Egypt, 1949	97.9	Argentina, 1942.	102
Union of S.Africa, 1936.	101.8	Brazil, 1940.	100.6
Uganda, 1931.	92.3	Chile, 1940.	98.3
Tunis, 1936.	105.5		
2. <u>Asia.</u>		5 <u>Europe.</u>	
India, 1951	107.0	Germany, 1939	95.4
Iraq, 1934.	99.9	Belgium, 1930	98.1
Japan, 1940.	100.0	Bulgaria, 1934.	101.0
Turkey 1940.	99.8	France, 1936.	92.6
Malaya, 1931	—	Italy, 1936	96.4
		Portugal, 1940	92.6
		Switzerland, 1941	93.5
3. <u>N. America.</u>		6. <u>Oceana.</u>	
Canada, 1941.	105.0	Australia, 1933.	103.2
U.S.A. 1940 (whites)	101.2	New Zealand, 1936	103.1
		Hawai, 1940.	137.6

Table 5. Populations by sex ratios (Male to Female) in selected countries.

A study of this table not only brings out the more significant variations between Egypt and various other countries in the balance between the sexes; but also gives a basis for indicating some of the principal factors responsible for the differences in sex relations between the countries.

Colonial areas, to which are carried or attracted large labour forces, are, of course, the places where the sex ratios are highest.

Naturally the lowest sex ratios are found in those countries which have been sending out a considerable number of emigrants and whose populations also have relatively short expectations of life; this factor which concentrates the population in the younger ages where males preponderate is pronounced. Egypt and a large part of Latin American countries are included among these.

Examining the sex ratio of Egypt during the last five censuses - table - we notice a slight decrease in it.

Census.	Males.	Females.	Ratio.
1897	4,981,012	4,743,740	103.2
1907	5,616,640	5,573,338	100.8
1917	6,369,517	6,348,738	100.3
1927	7,058,073	7,119,791	99.1
1937	7,966,675	7,954,019	100.2
1947	9,417,962	9,620,865	97.9

Table 6 : The sex ratio between 1897 and 1947.

This may be attributed to certain customs peculiar to the Orient - such as a "hareem" an enumeration would be obliged to rely entirely upon the report of the head of the family as to its membership. Centuries of prejudice and suspicion would ^{include} some to refrain from reporting their women and girl babies.⁽¹⁾ But this prejudice towards women was not so common during the 1947 census, as it was in 1897 when the ratio was 103.2. While on the other hand the fear of compulsory military service would interfere nowadays with the reporting of boys - this may lead us to assume that the ratio for 1947 is not far from the right number.

Nevertheless this sex ratio would have been lower than it is, were it not for the relatively short life expectation that prevails in Egypt as mentioned before.

Rural and Urban Differences:

The tendency of females to remain on the farms and of males to concentrate in the cities is a significant principle in the study of Egyptian demography. In table are presented sex ratios for the "Governorates" and "Moderiates" of Egypt for the last three censuses.

(1) Population Censue of Egypt 1907 - p. 91.

	1927	1937	1947	Area.	1927	1937	1947
<u>A. Governorates.</u>							
Cairo.	111	105.9	103.2	B. Frontiers Governorates	119	119.7	112.8
Alexandria.	108	103	102.1				
Canal.	115	107.3	109.9				
Damietta.	104	103.4	101.9				
Suez.	122	111.2	110.8				
Total.	108	104.7	103.6				
<u>C. Moderi-ates.</u> <u>of Upper Egypt.</u>				<u>D. Moderi-ates</u> <u>of Lower Egypt.</u>			
Giza.	101	102.7	99.5	Behera.	94	94.5	92.5
Beni Suef	100	98.9	93.8	Ghurbia	93	94.3	94.2
Fayoum	100	98.4	95	Dukahlia	95	96.9	95.9
Minya	100	101.7	97.2	Sharkia	95	96.5	98.2
Assint.	102	104.8	99.7	Monofia	98	98.7	95.3
Girga	102	106.9	99.4	Kaliobia	99	101.1	99.1
Qena	102	105	99.7				
Asawaan.	83	89.6	86.7				
				Total.			95.4
Total.			97.9				

Table 7: The sex ratio in different parts of Egypt.

The above table reveals some striking differences in the relative importance of males and females in the various regions of Egypt. Outstanding is the low percentage of males in the North Eastern section - i.e. - Moderi-ates of Lower Egypt because this region has supplied other parts of the nation and particularly the big cities, i.e. Cairo, Alexandria, Port Said - with so many migrants - nearly all of them are males, while the females stay at home. Thus Behara and Gharbia have low sex ratios, or high proportions of females in their populations.

The Governorates of the Red Sea, Lenea, Southern

and western deserts are districts with greatest scarcity of females. The instability, the unsettled society, the nomadic habits of frontier desert population are greatly influenced by this feature of population make-up.

The principle Governorates on the other hand, i.e. Cairo, Alexandria, Canal, Suez, and Damietta, have high sex ratios because they are the receivers for a large share of the nation's immigration composed predominantly of males.

This differential sex ratio in Egypt has a definite bearing on marriage problems in both rural and urban districts. In farming areas where men move to towns in large numbers there is a preponderance of females in the marriageable ages; on the other hand in urban districts there is a surplus of males. This disproportion in the sexes gives the sex with the smaller numbers greater selective opportunities in marriage.

3. Occupational Status.

The collection of the data on Egyptian occupations began in 1917, when information was secured on the number of persons in each family who were engaged in one or other of the three main occupations; agriculture, commerce and manufacture.

Following the 1917 census, the work of differentiation

went on rapidly. By 1937 the labour force was classified into the following industrial categories; agriculture; fishery; mining; construction; manufacturing; transportation; communication, and other public utilities; wholesale and retail trade; finance; insurance and real estate; personal services; amusement; recreation and related services.

The general classification, however, of the occupational status of the population of Egypt is shown in Table 1 and Chart 1:

Occupation.	Male.	Female	Total	Percent-
Agriculture.	3,605,080	703,121	4,308,201	31.25
Industry.	562,695	47,038	609,733	4.0
Transport & Communi- cation.	137,899	1,012	138,911	1.0
Commerce.	399,923	60,152	460,075	3.5
Public Administration (not industrial)	170,236	520	170,756	1.0
Social workers. (General & Private)	135,139	16,068	151,207	1.0
Professions.	187,060	69,039	256,099	2.0
Unproductive business- es or unknown.	860,417	466,786	1,327,203	10.0
Holding no occupation	886,326	5,504,609	6,390,935	46.25
Total	6,944,775	6,868,345	13,813,120	100.0

Table 8 : Occupational classification of the Egyptian population over five years of age.

From the above Table and chart it is clear that an overwhelming proportion of the Egyptians obtain their livelihood from agricultural enterprises. The

OCCUPATIONAL CLASSIFICATION OF EGYPTIAN
POPULATION (MALE & FEMALE)

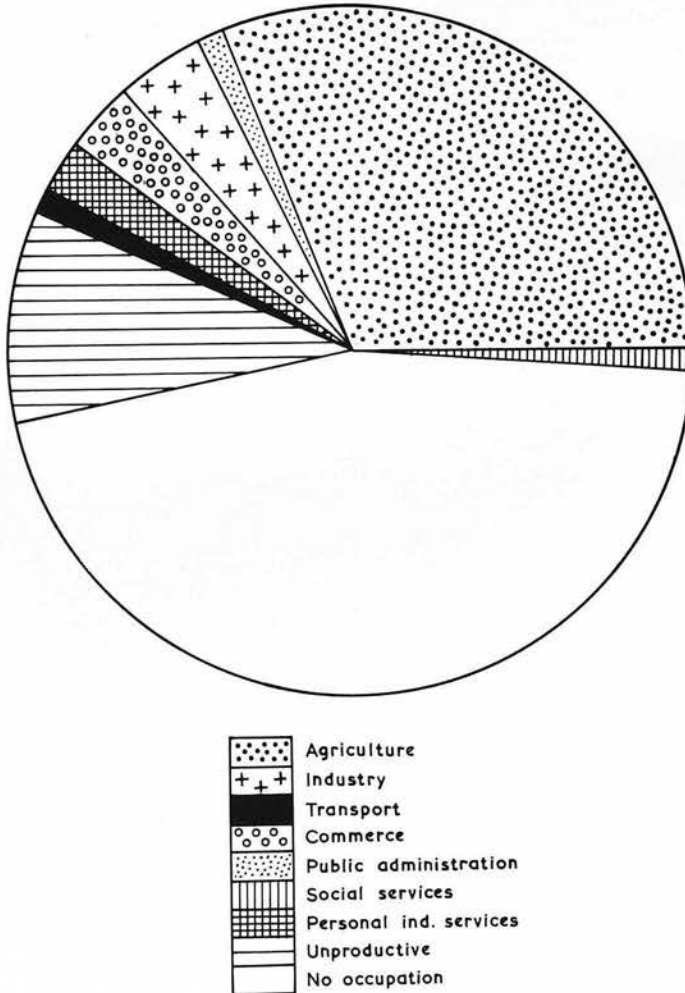


Fig. 5.

bulk of population working in agriculture would have been even higher if the many women helping on their relatives' farms classed in the census as unoccupied, had been included.

Industry comes second with 4%. This figure is, however, curious since the intercensal period saw a considerable expansion of Egyptian industry, which in most cases was not effected at the expense of artisans. Competent observers⁽¹⁾ believe that the census figures are inaccurate and put the industrial population (excluding transport) at about 750,000.

The high percentage of 46.25, which was reported in the census as holding no occupation, is not really as high as it appears; it includes the group of housewives.

Nevertheless, some of the essential facts concerning occupational make-up are brought out clearly by stating the numbers of persons engaged in certain professions to the total population.⁽²⁾

Thus the occupational distribution of our

(1) C. Issawi - Egypt - page 51.

(2) It may be interesting to note here that in Egypt there is one doctor for every 4,255 inhabitants, one person engaged in religious professions for every 312, one lawyer for every 4693, one engineer for every 1596 and one teacher for every 520 residents.

workers differs greatly from that of some other countries in the West. Obviously the level of development if a culture determines in large part the proportion of people that can be placed in any given type of occupation. In a strictly agricultural society for example most of the people must be engaged in producing food, shelter and clothing - in activities connected rather directly with nature. While on the other hand in a highly urbanized society, a comparatively small proportion of people may be engaged in the actual production of raw materials essential to food, shelter and clothing, and yet the population survive.

Therefore if we compare our population with the U.K.'s we find that we had a higher proportion of workers in Agriculture and a small fraction in industry. Such a high proportion of workers in agriculture must put up with a low income per head.

This occupational congestion, whatever its remedy, has its origin in the failure of our economy to adjust itself to the rapid growth of our numbers. In the first place our agriculture community has expanded mainly by internal growth. Secondly Egyptian farming has not been subject to any revolutionary change in technique which reduces the demand for farm labour. It follows to-day the same technique that it has done for hundreds of years, so

that the size of the agricultural community has been determined mainly by the food requirements of a growing population. We might possibly have escaped agricultural overpopulation if we had had an industrial revolution to synchronize with the establishment of those conditions of life that made rapid growth of numbers possible. But it is doubtful - leaving aside foreign rule - whether we had the historical antecedents for such a revolution.

4. Educational Composition:

Although many countries have ceased to ask questions on literacy in their population censuses because of the small proportion of illiterate in the populations, the problem is still present in Egypt.

The percentage of illiteracy in Egypt - i.e. the proportion of the population unable to read and write their own language - is extremely high compared with the other countries that still have illiteracy.

Table ⁽¹⁾ shows the extent of illiteracy in different countries - Egypt included.

(1) Page 204 of the Demographic Year Book of the U.N.O. 1948.

Country.	Per Cent.	Country	Per Cent.
Egypt.	85.2	Finland(1930)	0.9
India.	90.9	France (1936)	3.8
Canada (1931)	3.8	Greece (1928)	40.8
Mexico (1940)	51.6	Hungary(1941)	6.0
United States(1930)	4.3	Italy (1931)	21.6
Brazil (1940)	56.7	Poland(1931)	23.1
Chile (1940)	28.2	Portugal(1940)	48.7
Turkey (1935)	79.1	Rumania(1948)	23.1
Belgium (1930)	5.6	Spain (1940)	23.2
Bulgaria (1934)	31.4		

Table 9 : The extent of illiteracy in selected countries.

Even though great changes have taken place since these data were assembled, they give a general idea of the variations in educational status in Egypt and elsewhere throughout the world. They also reveal how much remains to be done in this field in Egypt.

In 1937, it had been estimated that there were 11,242,000 illiterate persons among the total number of 15,932,694. This means that 81.4% of the population are illiterate. Nevertheless, Egypt has made noticeable progress in reducing illiteracy. The change from 86.2% in 1927 to 81.4% in 1937 is of some significance, but this does not alter the fact that in Egypt there is much dissatisfaction with the results attained.

The significant item in Egypt's educational background is the pronounced tendency to concentrate upon the education of the boys and to give less attention to the provision of schooling for girls. This is already evidenced by the following table.

1927		1937	
Male	Female	Male	Female
77.1	95.3	72.8	90.0

Table 10 : Percentages of the population not able to read and write over five years of age.

Nevertheless, opinion is very well disposed towards female education. Even the most reactionary circles do not deny its necessity - it would be difficult for them to do so, with their memories of childhood - though they maintain that it should be restricted to such subjects as religion, morals and housekeeping, and that girls should never be allowed to attend the same courses as men. However, up to the present, the trend has been towards a progressive enlargement of the scope of female education. A new generation is growing up whose influence in future developments will be incalculably good. (see Fig. 6.)

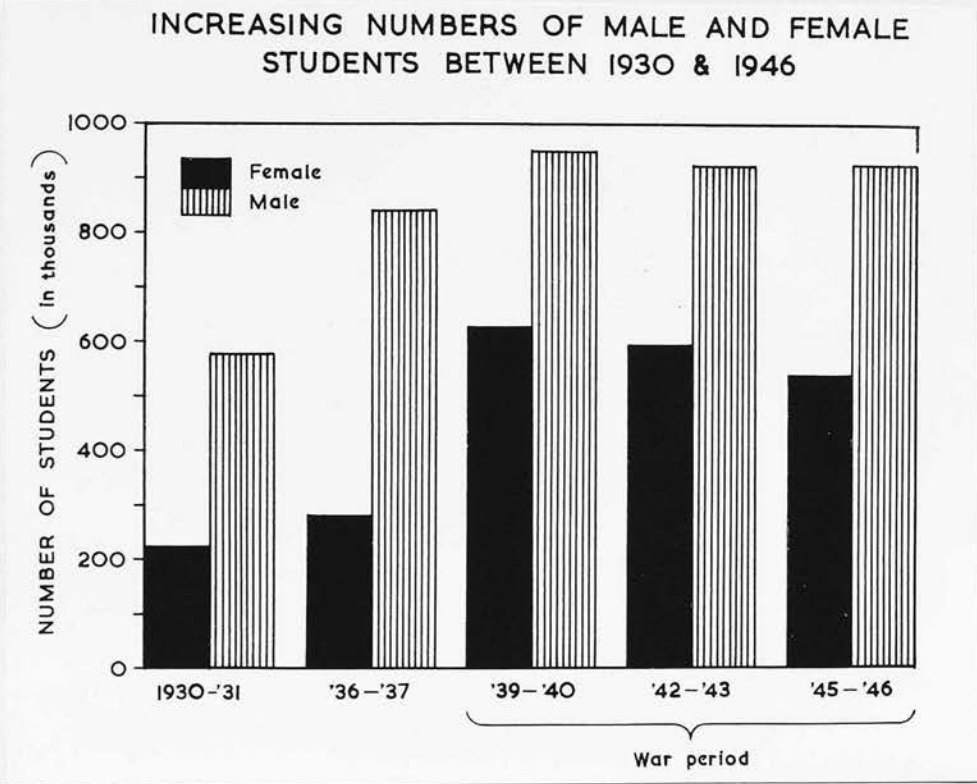


Fig. 6.

There is also a pronounced tendency for residents of Egyptian towns and cities to have a higher educational status than the nation's country people. Naturally, the ability to read and write was found with much greater relative frequency in the provinces' capitals than in the "interior" portions of the various provinces. In every case the population of the city which was the province capital had enjoyed the privilege of learning to read and write to as much greater extent than the inhabitants of the more rural portions of the province.

Coming to the literate population which is 18.6 of the total, we find that very few have the equivalent of a high school diploma.

Table // gives a general view of the numbers of educated persons (male and female) and the amount of schooling they have got.

Grade of school completed.	Males	Females	Total.
a. able to read and write.	1710	654	2364
b. obtained primary certificate	104	24	428
c. obtained the intermediate certificate.	35	4	39
d. graduated from El Azhaar University (a religious University only)	6	-	6
e. obtained higher certificate in letters and Law.	11	1	12
f. obtained higher certificate in science.	13	-	13
g. obtained a police or a military certificate.	2	-	2
h. graduated from abroad.	5	1	5

Table 11 : The numbers of educated persons in thousands.

The causes of the low percentage of schooling are complex. (1) the hot weather, which reduces the working capacity of pupils, most of whom have poor health and are undernourished, (2) the frequent changes of educational policy with the change of ministers, (3) the deadening effect of a rigid centralization which prescribes exactly the same curriculum and text books for every single school.

But all these factors are overshadowed by two social ones; the poor quality of teachers and the absence of family life. The problem of teachers is still as acute as in the time of Mohammed Ali. Government teachers are officials and consequently much prefer the administrative posts of the Ministry of Education, where the chances of promotion are greater, to teaching posts. Their lack of interest leads to aloofness from pupils and parents and a minimum of contact outside school hours. Those who are keen on the job are soon chilled by the centralization, which prescribes not only the subject and text-book but even the pace at which the book must be read.

As for the absence of home life, its importance can hardly be over-estimated, for what a child learns at school is as nothing compared with what he learns at home. A state of society is conceivable in

which education is entirely divorced from the home, but the present system of education presupposes a rich family life, which in Egypt, unfortunately, does not yet exist on a large scale.

5. Religious Composition.

Yet another factor of much importance in the composition of populations in the religious adherence of the people.

Egypt has three very different religious cultures which have a profound effect on family life; the Moslem, the Christian (mainly Coptic) and the Jewish. The distribution of the population according to religious communities is shown in Table 12 .

Religion.	Total Number		Percentage.	
	1927	1937	1927	1937
Moslem.	12 929,260	14,552,695	91.2	91.4
Coptic (eastern churches.	946,393	1,085,281	6.7	6.8
other Christians	235,517	218,689	1.7	1.4
Jewish	63,550	62,953	.4	.4
Others.	3,144	1,076		
Total.	14,177,864	15,920 594	100	100

Table 12: The religious composition
(1927 and 1937)

In general Moslems form 91%, Christians of all kinds 8.5%, Jews and others 0.5%. Clearly, from

PERCENTAGES OF RELIGIOUS COMMUNITIES
TO THE TOTAL POPULATION 1937

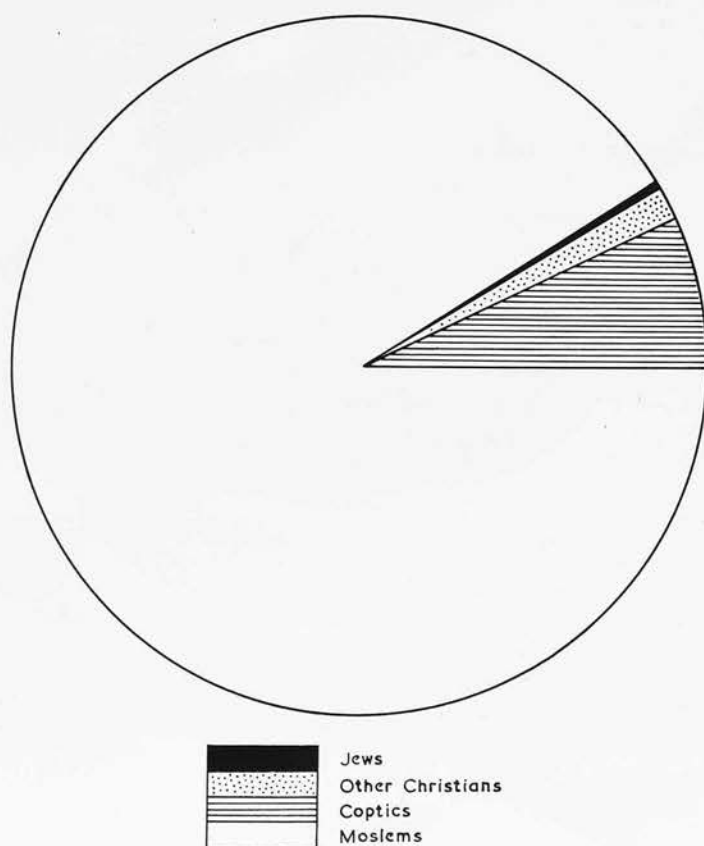


Fig. 7.

the point of view of numbers, the chief factor in the population problem in Egypt is the Moslem one, the Christian playing a relatively small part. It behoves us, therefore, to devote careful attention to community customs which relate to fertility, particularly those of the Moslems.

In Egypt, as elsewhere in Moslem lands, the religious communities are practically each a closed system. The religious authorities are civil officers and carry out their own laws relating to marriage, divorce, care of children and inheritance. In Egypt, the head of each religious community is appointed by the king, and each community has certain official boards with administrative and magisterial functions in affairs of personal status. In such matters the state leaves the community to itself and rarely interferes, except to regulate intercommunity affairs. It amounts to a state within a state.

Furthermore, great and effectual effort is made to prevent any transfer from one community to another. Each individual is registered in a community and cannot leave it to join another without certain legal formalities that discourage easy mobility. The Moslems indeed have built such a strong barrier around their community, whether by custom or law, that it is virtually impossible to

resist the pressure of group opinion and leave the Moslem community. Very few in Egypt have ever succeeded in doing so.

One of the gateways between communities is the marriage gate, but so far as Islam is concerned this is the one-way door only. From the earliest times Moslem men have been encouraged to marry Christian and Jewish women, for in general, such wives and their children have become Moslems. But even to this day no Moslem woman may legally marry a non-Moslem. Ancient Mohammedan statesmen seem to have known the basic principles of population growth and accordingly crystalized these principles into customs, which they inaugurated or carried over by giving them religious sanctions.

The rigidity of the sectarian lines and consequent pressure to conform to the laws of the community give strength to customs relating to family life. On this point it might be said in brief that the chief difference in the attitudes of the communities towards the family is that the Moslem pays more attention to the family as based on religious creed as over against the blood relationship or the immediate household family. The Mohammedan regards everyone who professes his creed as his community brother; which custom, while containing the seeds of altruism, nevertheless

in practice dissipates the close bonds of the immediate family relationship of father, mother and children. This is not to say that there are no class lines among the Mohammedans. These do exist and in some cases are quite strictly drawn; but it does mean that the intimate bonds of family relationship as found in the Christian tradition are very diffused. On the other hand Christians and Jews hold closely to the immediate family and near blood relations. Rules for marriage and its dissolution and the care and education of children are more exact and discriminating than among Moslems. The result of these differences in practice is that there is much more freedom in marriage and divorce among Moslems than among Christians and Jews, and a more effective policy of conservation of children among the latter. Nevertheless, the whole of Egyptian thought and literature is heavily charged with the atmosphere of Islamic thoughts, and in consequence tends to produce an archaic frame of mind in those subject to its influence.

The Copts: The Coptic community, with its 1,085,281 persons, comes next to the Moslem community in the religious composition of

(1) Egypt. This group is passing through some crisis. The reasons are not far to seek. The mere presence of a minority acts as a constant irritant to the majority, except in a very highly civilized community, and this accounts for the anti-coptic feeling in the lower social strata. Such irritation is greatly magnified when the minority is on the average wealthier than the majority, as is the case with Copts. Moreover the Coptic Orthodox Church has shown few signs of vitality. The clergy are

(1) The Copts claim to be the descendants of the ancient Egyptians, although throughout the ages their racial composition has been altered by inter-marriage with other races. The Egyptians became mainly Christian in the early centuries of the Church, but the majority of them broke away from the main body of the church and embraced the Monophysite doctrine, for reasons not wholly religious: partly their adherence to Monophysitism was an expression of national hostility to Byzantine and partly a result of struggle for predominance between the Patriarch of Alexandria and the other Patriarchs. They formed a "national" church, which in course of time acquired its name "Coptic" in opposition to the Orthodox Church of Byzantium. They were persecuted by the Imperial authorities, but the Arab conquest in the 7th century gave them a short respite. They were tolerated as "Ahl-al-Dhimma" and were recognized as an autonomous church on a level of equality with the Orthodox. But after a time discrimination began once more, and continued with intervals until the coming of Mohamed Ali and his successors when they were relieved from persecution and gave full opportunity in the public services.

obscurantist and quite unable to satisfy the more intelligent laymen. Consequently, many Copts are going over to the Coptic Catholic Church, whose number has risen to 36,000 or to the Protestant Church, whose members number 65,000.

The bulk of the Copts, as of Moslems are peasants living in the villages of the Nile Valley and Delta. They produce the same crops, suffer the same oppressions and face the same economic problems. They have similar customs for birth, marriage and death, similar superstitions and folk-lore.

There is also a Coptic land-owning and town-dwelling class. Much of the old monopoly of certain economic functions has gone, but something of it remains. Most of the goldsmiths, money-lenders and land agents are Copts, and there are numerous Coptic minor officials in certain ministries, although it is more difficult for them to be promoted or appointed to important posts than formerly. There is perhaps a certain discrimination against them, but not enough to prevent them prospering. The urban Copts, like the rest of the urban population, are in process of transition from traditional way of life to one at least superficially westernized. It may be that being Christians they have been able to

advance a little more rapidly than the Moslems on the way of Westernization; but it is the same process which both are going through and which may ultimately remove many of the differences between them.

Like other Eastern Christians, the Copts are keenly aware of the benefits of education. In the last two or three generations a large number of coptic schools have been established. They include 4% of all schools in the country, and 16% of all schools above the elementary level. Over 25% of the pupils in all schools above the elementary level are Copts; in girls' schools the percentage is even larger. Of this 25%, rather less than half, are students of Coptic schools, and a large proportion of the rest attend foreign institutions, especially missionary schools.

It is clear, however, that the Copts are a more literate community than the Moslems, but in spite of this have made only a small contribution to the intellectual life of modern Egypt. There are to-day scarcely any outstanding coptic writers or thinkers. Nor is there a very active spiritual life among them. It is true that since the 19th Century there have been stirrings of spiritual revival, mainly among the laity, but they have

been obstructed by the attitude of the Patriarchate, the upper clergy and the monasteries; this is one of the curses of the numerous conflicts which have occurred between the Patriarch and the General Council of the Community.

Other Christians: In addition to the Copts, the Christians in Egypt include Maronite, Greek Orthodox, Greek Catholic, Syrian Orthodox and Syrian Catholic communities. The greater number of these are Syrians or Lebanese by origin. The economic position of the Syrians is on the whole a favoured one. The majority belong to the urban middle class, concentrated in Cairo, Alexandria and the Canal Zone. Commerce and the professions are their main callings. During the period of British occupation there were many Syrian officials in the Government, but most of them have now retired.

The Jews: The 62,953 Jews of Egypt live mainly in Cairo and Alexandria, and are divided into two communities. The orthodox (Rabbanite) Jews and the Karaites, who accept the Scripture, but reject the Talmud, and of whom there are about 5,000. The orthodox Jews are again divided into two communities, those of Cairo and Alexandria, each with its Chief Rabbi and its communal organization.

The Jews are mainly Arabic-Speaking. They are of long residence in the country, and have a unique position in its economic life. They are financiers, merchants, clerks, artisans and members of the liberal profession. Socially they lead their own separate existence. Culturally they are largely Gallicized. Individual Jews play a part in the public life of the country, as deputies and even as court officials. But they do not interfere in politics as a community, partly because so many of them have foreign citizenship, and partly because their position is satisfactory and they have been well treated for the last four generations. Yet beneath the surface, however, there is a considerable dislike for them, based partly on religious prejudice, partly on their economic position, and no doubt the recent Palestine question has powerfully reinforced anti-Jewish sentiment.

CHAPTER 4.

THE BIRTH RATE.

The crude birth rate - birth registration - the trend of fertility - causes of excessive birthrate - the marriage rate - the cultural norms.

The population of a country can be regarded from two points of view. We can look upon it as a collection of human beings which grows and expands (or contracts) at a certain rate. We can also consider it as a body of persons engaged in producing various goods and services on which its material welfare depends. Obviously, there should be some sort of balance between these two branches of its activity. If it reproduces itself faster than its wealth and income increase, poverty, misery and suffering ensue. On the other hand, it may pursue wealth and material progress with a measure of attention that interferes with its urge to reproduce and endangers its future existence.

Egyptians are not concerned with problems of the second variety which face the nations of Europe, the U.S.A. and the British Dominions to-day. There are no signs of our productive activity interfering with the rate of production; on the contrary, as we shall see in later chapters, our production efficiency is being seriously affected in every direction by the size and the rate of growth of our number.

The crude birth rate.

The reproductive performance of the population is commonly indicated by its crude birth rate, i.e. by the number of births per thousand of the population

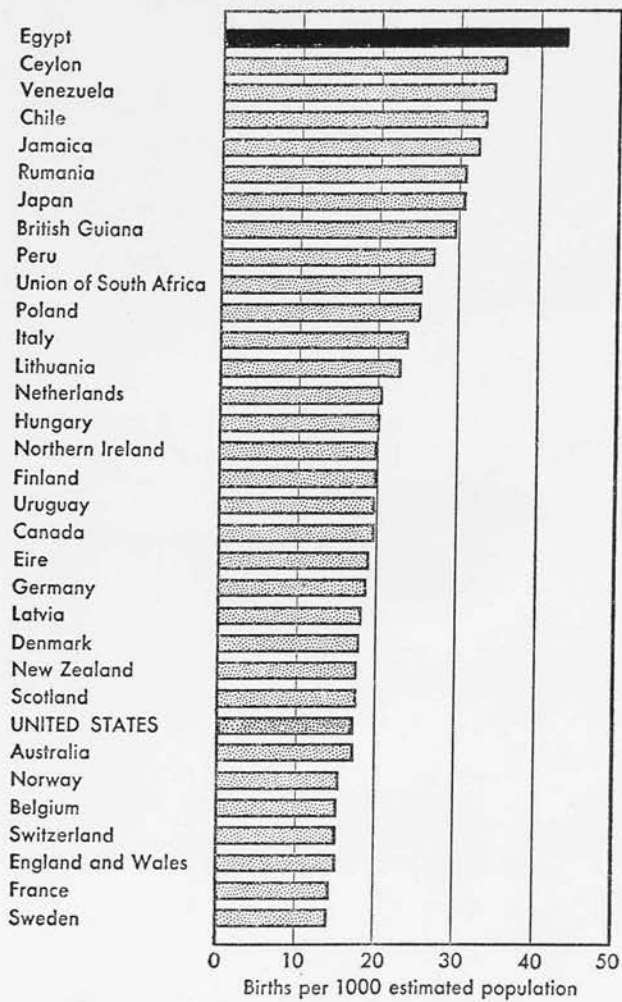
without any refinement of age, sex, occupation, income, or any other of the characteristics in which populations may differ. In 1945 the total population of Egypt was 18,110,055; there were 787502 live births in the year; the crude birth rate was accordingly 43.- per 1000 of the population.

This rate is fairly high if it is compared with rates of other countries in Europe or America.

Table 13^{and Fig-8} gives an illustration of the crude birth rate in some selected countries.

Country.	Year	Crude birth rate.	Country.	Year	Crude birth rate.
<u>Africa.</u>			<u>Europe.</u>		
Egypt.	1945	43.9	Belgium	1940	13.4
Mauritius	1939	36.0	England	1940	22.2
South Africa	1939	25.3	Germany	1940	14.6
<u>America.</u>			Italy	1940	23.4
Canada	1940	21.4	Norway	1940	16.3
U.S.A.	1940	17.9	Scotland	1940	17.1
Mexico	1940	43.5	Sweden	1940	15.0
Brazil	1940	38.0	France	1940	14.6
<u>Asia.</u>			Australia	1940	18.0
Burma	1939	32.3	New Zealand	1940	21.2
India	1939	33.0			
Japan	1938	27.0			

Table 13 : Crude birth rate in selected countries.



A COMPARISON OF CRUDE BIRTH RATES FOR SPECIFIED COUNTRIES, 1948

Fig. 8.

The crude birth rate is however, an imperfect index of the reproduction performance of a people.⁽¹⁾ It gives but a very rough notion of the actual fertility of the population, because it relates the number of births in a year to the total population, whereas obviously only a section of that population is responsible for the inflow of the new lives.

To appreciate the strength of the reproduction activity of a people, therefore, we should consider the total number of births that take place within it in relation to the size of its reproductive section. Only women in childbearing ages contribute to the growth of population, and a reproduction rate much more satisfactory than the ordinary birth rate is given by the ratio between total births and the number of childbearing women in a community.

Nevertheless, because of the unreliability of Egypt's age statistics, we are unable to make such refined analysis of the fertility, and so we must depend chiefly upon what we can learn from the crude birth rate.

Birth Registration.

The birth registration ordinances enacted in Egypt

(1) "Population Analysis" L. Smith p. 156.

in August 1913 provide compulsory registration of births within fifteen days. Notice of a birth has to be given to the nearest Health Bureau by (1) the father (2) the mother (3) the relative (4) the occupant of the house in which the birth occurred, or (5) any person present at the birth.

The birth registration forms in Egypt call for date of birth, name and sex of child, name and nationality of parents, occupation and religion of father, date and place of birth.

In view of the illiterate state of the population and other factors it is not surprising that the registration of births and deaths is far from ideal in Egypt. In some localities the registration is in the hands of barbers and tax collectors. Fortunately however, some basis for estimating the extent of the failure to report births and deaths is afforded by the vital rates given separately for chief cities and for Health Bureau areas which include not only the chief cities but also increasing numbers of rural villages. In 1939 the Health Bureau areas included almost one third of the total population of Egypt.

Even the recorded rates for all Egypt, including all the poorly registered areas, give the essential story of every high level of fertility, mortality, and infant mortality. In 1939 the recorded rates for all Egypt were 42.2 births and 26.0 deaths per

1000 live births. The rates based on the more adequate registration in Health Bureau areas were: birth rate 46.8; death rate 29.7; and infant mortality rate 198.

The following are average rates for Health Bureau populations:

Area.	Birth	Death	Infant Mortality.
Governorates	43.9	25.2	191
Provinces " Lower Egypt	48.6	32.0	184
" " Upper "	49.7	35.1	224

Table 14 : Average birth, death and infant mortality rates for health bureau population in Egypt.

The comparison of the data for total Egypt with those for the former for 1939 should be about 11 per cent higher, the death rates about 14 per cent higher, and the infant mortality rates about 23 per cent higher. The Health Bureau areas themselves are very probably not models of complete registration and their constituencies may not be representative of the total population.

It is therefore necessary to emphasize that all vital rates presented in this chapter, regardless of whether they are actual or derived data, must be regarded at best as approximate.

Causes of inadequate birth-registration.

There are many reasons for inadequate birth-registration in Egypt. One of the most outstanding is that the general public do not realise the importance and the benefits of registration. They are not enlightened enough.

Besides this general negative reason there are many other positive motives which are bound to result in defective registration. One of the most important of these is the prevalent intense desire to avoid army conscription at any cost. In Egypt all men between the ages of 19 and 27 are liable to be called up unless exempted for certain reasons prescribed in the law.⁽¹⁾ Otherwise, exemption could only be obtained by paying a sum of money which ranges from twenty to a hundred Egyptian pounds according to the stage of recruitment process reached.

Serving in the army was, and to a certain extent still is, very unpopular in Egypt. This is particularly so among the fellahin. They go to

(1) Exemption is afforded to the following classes:-

- (a) Government employees,
- (b) Only sons, or the eldest if there is no other "breadwinner" in the family.
- (c) Students in all religious institutions, some technical schools and all university students.
- (d) Certain religious officials.

See Almanac (of Egypt) for 1939 page 590.

any length to avoid what they consider to be an ordeal.⁽¹⁾ To help his son to escape recruitment the fellah of to-day omits altogether to register his child's birth.

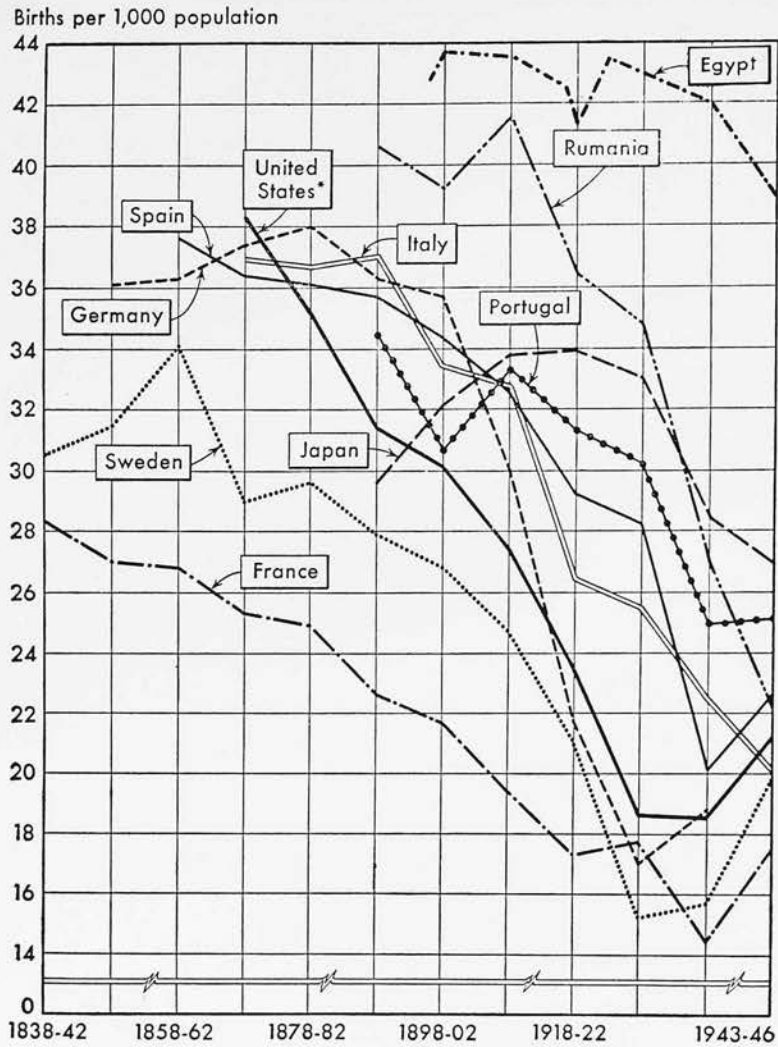
The Trend of fertility.

Year	Total Births.	Percentage.	Year	Total births.	Percentage.
1917	513715	40.1	1932	642595	42.5
1918	502905	38.9	1934	651663	42.2
1919	493507	37.7	1936	698186	44.2
1920	558609	42.2	1938	704376	43.3
1922	582662	43.1	1940	697700	41.6
1924	604568	43.8	1942	658324	38.2
1926	623825	44.2	1943	689771	39.6
1928	629433	43.6	1944	722166	41
1930	670817	45.4	1945	787502	43.9

Table 15 : The Egyptian trend of crude birthrate.

From the above table and chart it is evident that there is a considerable fluctuation in the

(1) Some hundred years ago they did not hesitate to inflict enough deformity on themselves, their children or on their male relatives to render them unfit for military service. A full and interesting account of this shameful state of affairs was given by Mr. E.W. Lane, a nineteenth century English explorer, in his admirable book "An account of the manners and customs of Modern Egyptians", London, 1836, page 201.



Crude Birth Rates (births per 1,000 population) in Selected Countries, 1838-1946. Five-year averages, except 1943-46

Fig. 9.

rates, though it has been more or less constant in the last decade.

The period of World War 1 shows a constant decline with the greatest depressions in 1918 and 1919, the years of the influenza epidemic. This low point is partially due to the withdrawal of some hundreds of thousands of men from the labour corps during the war, who, although counted in the census, were prevented from marrying.

The advance of recent years may be accounted for in the main by the efficiency in recording as the number of trained officials grows.

Causes of excessive birthrate.

In order to understand fully the reasons for the high birthrate in Egypt one would have to understand almost all the factors that go into the making up of life in the nation. So complete an expansion is hardly desirable even if it were possible but certain aspects of human motivation as directly relating to the birthrate and reproductive behaviour should be noted. They are discussed briefly under two classifications (1) general conditions of life, and (2) culture norms.

General conditions of life.

Poverty: Doreen Warriner, in her study "Land

and Poverty in the Middle East"(1) gives a general statement that there is no standard of living in Egypt and anything lower than that will be death. No further investigation will be carried on in this chapter on poverty itself because all that might concern us at present is the relation between poverty and the high birthrate in Egypt.

Many studies have established the general fact of an inverse relationship between wealth or income and birthrates; a relationship which apparently has characterized western cultures for a considerable time. For example, Bertillon in 1899 found the following relationship between income and birthrates per 1000 married women between the ages of 15 and 50 in the cities listed below.(2)

Econ. Conditions.	Paris. 1889-1893	Berlin. 1880-1894
Very rich	65	121
Rich	94	145
Very comfortable	96	172
Comfortable	109	192
Poor	128	198
Very Poor	143	214

Table 16 :relationship between income and birthrate.

(1) D. Warriner "Land and Poverty in the Middle East" R.I.I.A., page 35.

(2) Adapted from W.J. Thompson "Population Problems" third edition page 166 McCrawhill Book Comp. 1942.

Marshall in "Principles of Economics" stated that the birthrate is generally lower among the well-to-do than among those who make little expensive provision for the future of their families, and who live an active life, and that fecundity is diminished by luxurious habits of living.⁽¹⁾

Moreover it is the most advanced countries which in recent times have availed themselves most largely of contraceptive devices and other preventive measures to reduce their birthrates, and within these countries it is on the whole among the more cultured classes and those enjoying a higher standard of life that the birthrate was first to fall and with whom it has fallen most. It is rarely found that a rise in the social and economic status is accompanied by an increased rate of reproduction.

The popular saying "The rich get rich, and the poor get children" seemed to be a good description of the observed facts. In other words, throughout much of the western world and in Egypt there seems to be an inverse relationship between economic status and fertility. As social and economic status increases the rate of reproduction

(1) Marshall "Principles of Economics", page 185.

decreases. (1)

Professor Kiser, using data collected in the National Health Survey, found that the standardized birthrate per 1000 wives was 93 for the business class, 101 for the professional, 112 for the skilled and 137 for the unskilled. He also found that the standardized birthrate was largest (154) in the relief class, declined to 137 in the class with income under £ 1000 but without relief to 94 where the income was £ 1000 to 1499 to 77 with income of 1500 to 1999 and 37 with income of 2000 to 2999, but rose to 88 when income was 3000 and over. (2)

The same conclusions were reached by the British Royal Commission on Population in the report of June 1949 when pointed out that the professional workers of Great Britain had families distinctly smaller than the average for all classes, while the unskilled labourers, agricultural labourers and miners had families larger than the average. (3)

This is again an indication of the reversal of the inverse relation between economic status

(1) "Population Problems" W. Thompson, p. 174.

(2) "Population Problems" W. Thompson, p. 174.

(3) Royal Commission on Population - H.M.S.O.
London - Chapter 15.

and birth rate.

Urban and Rural Population: Urbanization is another factor which affects the birthrate in Egypt to a very limited extent, because urban-industrial economic culture, as it has developed in western Europe and America is very limited. The census of 1948 counts 74.9⁽¹⁾ per cent of the whole population were defined to be rural population. The material cultural superstructure of this rural life is so constructed that man is not far removed from nature. Birth, growth and death are part of life itself which are seen daily, because the whole environment is identified with nature process. Add to that the farm enterprise in Egypt is usually a family enterprise in which the labour of children can be suitable utilized as labourers and wage earners especially in cotton plantations which occupies 13 $\frac{1}{2}$ % of the total cultivated area.

A cotton expert recently declared that "cotton required not only a dense population, but one with a birthrate above the average."⁽²⁾ Again children in Egypt help in caring for the animals, weeding, removing plant pests, etc. and the expense of

(1) The Demographic Year Book of the U.N.O. Page 213.

(2) C. Isawi "Egypt - Socio Economic Studies", page 44.

maintaining a child is little indeed.

For this reason the society itself has always emphasized the family, placing family interests above individual interest, and is much more biological in its entire setting than is urban life. Sex, reproduction, life, growth, decay and death are part of the normal world of the child, youth and adult in the community. Children are taken for granted in the Egyptian rural family; mating and reproduction are part of the normal scene.

These general patterns of rural culture all help to explain the much higher birthrate of rural areas in Egypt.

Climatic factors: Egypt is almost entirely within the North temperature zone between the parallels 22N and 32 N. In the Delta the temperature ranges from 2° C to 43° C between February and July. In Upper Egypt the range is from 7° C to 45° C. This summer heat could be a sound reason for the high birthrate in Egypt. For it is believed by some research physicians that a relation exists between climate and fecundity, the latter being at its maximum under a moderate climate which facilitates the maintenance of normal body temperatures.(1)

(1) See "Huntington Ellsworth "Season of birth" New York, Willy 1938. and see also Mills, C.A. and Senior F.A. "Does climate affect human conception rate?" A.G.M.Chicago, December 1930, Vol. 46, pp.921-929.

According to this theory, fecundity is recuded by cold climate which makes it difficult to keep the body sufficiently warm. Similarly, it is claimed that marked seasonal variations in temperature which occur in some areas of temperate climate cause significant seasonal variations in fecundity.

The marriage rate.

Marriage, at least as far as social purpose goes, marks the sanctioned beginning of the reproductive cycle in our culture, for marriage gives social sanction to the kind of sex behaviour that makes possible the initiative of a new life cycle for individuals. In such a culture where most reproduction takes place within marriage, the marriage rate and the age of marriage are highly significant factors in understanding fertility rates. The trend of the marriage rate in Egypt is summarized in the accompanying table.

Year	Marriage rate.	Year	Marriage rate.
1932	1941	13.7
1933	1942	15.1
1934	1943	15.5
1935	13.5	1944	15.4
1936	13.8	1945	14.9
1937	13.1	1946	15.2
1938	11.8		
1939	11.1		
1940	11.8		

Table 17: Annual crude marriage rates per 1000 persons
(1932-1946)

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1940	11.8		

Table 17: Annual crude marriage rates per 1000 persons in Egypt (1932-1946)

The foregoing table proves that the ratio of marriage to population changed little during the years 1935-1939, yet the threat of war in 1940 and the reality of war in Egyptian deserts in and after 1941 combined with the unusually large ratio of youth of marriageable age in the population brought the marriage rate for the total population to the highest level ever recorded before.

In comparing the marriage rates in Egypt with these of industrial cultures we find that our rate is comparatively higher. In agrarian cultures and in primitive cultures most women marry, whereas in highly industrialized countries a considerable proportion do not marry. Foreexample, in the United States in 1930, 60 per cent of the population 25 years of age and over was married, while in Egypt in 1937 it was 72.9⁽¹⁾ per cent.

More important than the gross number of marriages to the birthrate of the nation is the age at which marriage takes place. The customary age of marriage greatly affects the number of offspring. Galton estimates that a marriage at the age of 18 will result in twice as many children as one at the age of 28.⁽²⁾ In Egypt, however, marriage takes place at an early age. Two reasons may be attributed for early marriages in Egypt,

(1) The Statistics Pocket Yearbook of 1945. The Ministry of Finance Cairo - Table No. 13 page 13.

(2) Davis, Barnes, and others "Introduction to biology" p. 351.

the chief occupation of the people and their religious traditions.

In agricultural communities such as Egypt, marriage does not impose financial responsibilities. In Egypt a wife is an economic asset to her husband. She is made to work and toil for her upkeep. She prepares the family's meals and carries them to the fields. She fetches all the water for the household and spends much time preparing fuel from cattle dung. Peasants all over the world lack ambition and marry at an early age even if a wife were a liability. They have no reason to wait, most of them earn as much in their early teens as they can ever hope to earn.

Among the lower classes of the main religious communities in Egypt, that is Moslems and Copts, marriage takes place early in life. Thus more children are expected. This is partly because the women who marry young have more years of possible child-bearing ahead of them and partly because fecundity is greatly reduced near the end of child-bearing age.

The postponement of marriage after puberty is considered improper from the Islamic point of view. Moslems believe that a man is not a "real" moslem if he remains single without a justifiable impediment. To get married and to have children

is considered one of the prerequisites of Islam. Young women, on the other hand, are even less inclined to postpone marriage after puberty, for it is almost the only prospect they can look forward to. "Marriage is of course the one and only aim in life among girls, and the desire to get a husband is encouraged in every way by the mothers. Mothers regard it as a compliment to themselves as well as to their daughters if the latter are sought after as wives at an early age."⁽¹⁾

In addition, the Egyptian climate may have some influence on both the universality and age of marriage. It brings puberty on earlier than in colder climates. This has made it possible for many girls to marry and even to bear children before they were twelve years of age, with dangerous consequences to the health of mother and child. This led the government in 1923 to pass a law⁽²⁾ fixing the minimum age of marriage at 18

(1) Winifred S. Blackman "The Fellahin in Upper Egypt, the religious, social and industrial life to-day, with special reference to survivals from ancient times". Harrap, London, 1927.

(2) Law No. 56 of December 1923. The breaking of this law carries heavy penalties whether for parents or officials involved. In some cases the law was circumvented by legally betrothing children even as young as six years, as the law made exception of those already engaged at the time of its passage. Though there is a considerable inclination to disregard this law, still as an educative influence it has done some good, for it has brought the people face to face with the issue. Egyptian medical men say that they are constantly solicited by parents to give their daughters and sons certificates showing the marriageable age to have been reached even though it is quite evident on physiological grounds that the individual has not yet arrived at that age.

for the boys and 16 for the girls. Unfortunately we have no published figures on this subject to compare age at marriage before and after that date. The average ages at marriage of Egyptian brides are given in Table 18 .

Age of Bride	No. of marriages	Percentage of total.
Under 20	119643	42
20 - 24	76768	28
25 - 29	38269	14
30 - 39	31920	12
40 - 49	8942	3.3
50 - 59	1615	.6
60 and over	259	.009

* Table 18 : Average age at marriage of Egyptian Brides, 1944.

Nearly half the number of annual marriages in Egypt take place among girls who are under 20. This, together with the fact that contraceptives are almost unknown, explains how young mothers in Egypt contribute to the general birth rate proportionately more than in other countries.

* Source: See "Statistical Yearbook 1947"
Egyptian Ministry of Public Finance, page 42.

To show how high these figures are, a comparison with the corresponding percentage for England and Wales may be useful. These are shown in table 19

Age of Bride.	No. of marriages.	Percentage of total.
Under 21	53271	14.8
21 - 24	139866	38.9
25 - 29	98308	27.4
30 - 34	32018	8.9
35 - 44	20910	5.8
45 - 55	8098	2.2
55 and over.	4867	1.3
General total	357338	100

Table 19 : Age at marriage for females in England and Wales, 1937.

If we compare table 18 with table 19 we can see that the incidence of minor marriages in Egypt is over three times as large as in England and Wales.

Easy Divorce: The easiness and the frequency of divorce in Egypt tend to increase child-bearing. Moslems are legally allowed to divorce their wives merely by saying "Thou are divorced". There is no need for a man to apply to court. Women, on the other hand, must do so, and must have substantial grounds on which to base their applications for divorcing their husbands.

This has resulted in an extremely high divorce rate in Egypt as is shown in the following table.

Religion	1940	1941	1942	1943	1944
Moslems	53954	60204	70767	79833	84258
Christians	791	169	223	225	287
Jews	72	73	88	91	106
Total	54227	60446	71109	80149	84645
Percentage per thousands	6.6	7.1	8.3	9.2	9.6

Table 20 : Divorce in Egypt 1940-1944.

Polygamy To the western student the custom among Moslems most commonly associated with fertility is that of polygamy. In early times the wide extent of these practices no doubt had some effect on the growth of Islam in both power and number owing to a military conquest and the enslaving of captive women. But that it is a factor in modern times may well be doubted. The number of polygamous marriages among the Moslems of Egypt (two wives in general) seems to be rather small.

In table 18 are given the percentage of Moslem wives to the whole population for the last two census.

Number of wives	1927	1937
One wife	95.18	96.86
Two wives	4.49	2.95
Three wives	.29	.17
Four wives	.04	.02

Table 21 : Polygamy in Egypt

From the above table it is obvious that the influence of the practice of having plural wives on the population's fertility may be dismissed as of little importance in spite of opinion to the contrary commonly held in some parts of Europe and America.

Births out of wedlock: Births out of wedlock may also be neglected, though it may have a noticeable effect upon birth rates in western countries. In Egypt courtship is so strictly controlled for two reasons; the custom of the seclusion of women, which affects christians somewhat as well as Moslems, and the very severe penalties visited upon women who disgrace the family, limit greatly the number of illegitimate children; and secondly, where there is concubinage the children are never considered illegitimate, but receive the same recognition as those of legally married wives. The effects of

so-called "illegitimacy" in birth rate would be exceedingly limited.

The cultural norms.

One of the most powerful influences in determining the actual exercise of the reproductive power within marriage is the set of values that predominate in a given culture. In Egypt these cultural values are such that the average family considers it desirable to have more children. In this connection Dr. W. Cleland of the American University at Cairo wrote "I have been interested in gathering some information from various quarters as to why people in Egypt want children and why they have so many. The answers may be summarized as follows:

1. It is the will of Allah to have as many children as possible, and any interference with natural processes will bring punishment. That is one reason why so many children die, as a punishment for sinful parents.

2. It is an honour to have a large family..."(1)

The first remark of Cleland could be very true; as it will be seen in a later chapter, Egypt has three different religions which have a profound effect

(1) W. Cleland "A population plan for Egypt" p. 123. The twenty second annual conference of the Milbank Memorial Fund, April 12-13, 1944.

on family life, the Moslem, the Coptic and the Jewish religion. The fertility according to these religions varies very much. In 1939 the birthrate was 48 per thousand for the Moslems, 34 for the Coptics and 21 for the Jews. The high birthrate among the Moslems is considered to be due to their religious teachings which encourage early marriages and polygamy. Ignorance and lack of proper social education among a large number of Moslems in Egypt are also contributing factors. Better education and perhaps better appreciation of responsibility among the minority - Copts - may be a factor in the lower birthrate. It is, however, not to be forgotten that intermarriage among the Copts might, to a certain extent, play a part in lowering the birthrate among that community.

Children as a social factor: Children in Egypt seem to possess an extraordinary social value, or else are a by-product of certain other social values.

They are desired early in life because life is short and there must be a time to enjoy them while the parents are still young and strong.

As to women's attitude, they want more children to hold their husband and to feel secure. They believe, often rightly, that the more children they have the stronger are the ties that bind their husbands to them. Referring to this point in her

book "The Fellahin of Upper Egypt, their religions, socials and industrial life to-day" Miss W.S.

Blackman wrote "Moslem law permits a man to put away his wife if she has no children, and a woman divorced for this cause has small chance of obtaining another husband when once the reason for her divorce has become known. Hence the prospect of childlessness is a very real terror to a wife and the methods women resort to to prevent such a catastrophe are numerous.

Lack of Leisure activities: The dull unchangeable conditions and the lack of leisure activities in the Egyptian village also play an important part in keeping the birthrate excessively high. Imagine the conditions of an Egyptian village after sundown with no lights, no amusements, no diversion of any kind except sex.

Time Magazine reported before the last war that the new quarters being provided in Libya for Italian immigrants were not to have electric light as Italian servants had observed a direct negative relation between bright lights and birthrate.

Child mortality: It is possible that the high infant mortality of Egypt which reaches 250 per thousand per year is in itself a reasonable factor for the excessive birthrate in Egypt. This phenomenon had been proved by Methorst in his

investigation of 21307 families between 1907 and 1911.⁽¹⁾ He discovered that when no child had died there was less than twelve months' interval between the birth of children in only 7.4 per cent of the cases, but that when a child had died another birth took place within twelve months in no less than 19.7 per cent. The only possible explanation is that when a child has died the parents seek to replace it quickly.

Birth control practice: In western culture, where birth control seems to be the most important influence affecting reproduction behaviour, differences in the extent to which various income, occupational, educational and religious groups practise birth control and the effectiveness of the control practised goes a long way in explaining birthrates.

In Egypt we could easily admit that birth control practice is strictly limited to the very upper class of the society only for it has long been accepted as a matter of common knowledge that birth-control practices begin first among the more prosperous, more educated and more favoured occupational groups and reach last the groups of low economic and

(1) Carr-Saunders "World Population" p. 104.

educational status at the bottom of educational scale although there are no data in Egypt to show prevailing of birthcontrol yet the low standard of living mentioned before, and the phenomenon of illiteracy which prevails in nearly 85 per cent of the population, are sound proofs for the limited practice of birthcontrol in Egypt.

Other factors: Other factors of considerable importance to the birthrate are the incidence of venereal disease,⁽¹⁾ sex abnormalities of a physical or psychological nature, and the broken family, broken for reasons other than divorce. Data on these factors are too limited to provide a basis for any definite estimate of their effect on the birthrate of Egypt.

The unemployment of women is also associated with early marriage and could be one of the factors of Egypt's high birthrate among all classes.⁽²⁾ Whether employment causes delayed marriage or whether

(1) For a discussion of venereal disease as it affects birthrates see Wm. Snow "Venereal Diseases and sex abnormalities in relation to population growth." The Annals of the American Academy of Political and Social Science, Nov. 1936.

(2) For a further discussion of this topic see R.M. Maciver "Trend of population with respect to a further equilibrium" pp. 287-310 in L.I. Dublin "Population problems in the U.S.A. and Canada" Houghton Mifflin Comp. 1926.

lack of marriage opportunities prompts women to work may be debated.

When one has taken into account the combined influence of all of these factors discussed, one may have a satisfactory explanation of the high birthrate in Egypt.

CHAPTER 5.

MORTALITY and MORBIDITY.

Death registration - age as a factor in the Egyptian deathrate - environment - infant mortality - stillbirths maternal mortality - morbidity - the expectation of life.

(1) The exact number is 78,742. See page 19 of the Statistical Year Book 1947 - Ministry of Finance, Cairo.

The Deathrate.

Death from a strictly economic standpoint is of primary significance when it cuts short the reproduction period, but it is always a factor in population growth. It is the factor which gives the birthrate exact significance in any human population. From the social standpoint death has differing implications at various stages in life. To stave off death as long as possible is one of the major problems of the individual and of the race. What is the trend of deathrate in Egypt? In what ways is it significant? These are the two important questions which we shall discuss.

The preceding discussion of fertility in Egypt showed that the trend of birthrate is 43.9 per thousand for the total population. Applied to the population of nearly 19 millions in 1947 it gives us a rough total of 780,000⁽¹⁾ per million births. On the other hand 512,003 were removed by death every year. Thus death has been a great solvent of the difficulties which our enormous number of births might otherwise create, removing the equivalent of three quarters of these that are born every year. But unfortunately this not a

(1) The exact number is 787502. See page 29 of The Statistical Year Book 1947 - Ministry of Finance, Cairo.

solution which any civilized people could like. That persons born should die is inevitable, and probably desirable in a world in which many people have standing room only. But it is still more desirable that if people are allowed to be born as small a proportion of them as can be managed should die before their time. Arguing on a purely materialistic plane, if we want to grow at our present rate we can achieve our objective more decently with both a lower birthrate and a lower deathrate. We need not reproduce vigorously in order that we may die profusely. Thus nature will not however, be cheated; our birthrate of 43 finds its counterpart in a deathrate of over 28 per thousand, the highest in the world as it is shown in the following table and chart.

Country	Crude death rate	Country	Crude death rate	Country	Crude death rate.
<u>Africa</u>		<u>Asia</u>			
Egypt, 1943	28.6	Ceylon, 1943	21.3	Spain, 1943	13.2
Mauritius, 1943	25.8	India, 1942	22.	France, "	16.4
S. Africa, 1943	9.7	Japan, 1939	17.6	Italy "	14.2
<u>America</u>					
Canada, 1943	10.	Palestine, 1943	14.8	Malta "	20.6
U.S.A. "	10.9	<u>Europe</u>		Netherlands	
Mexico "	21.3	Germany, 1939	12.7	1943	10.1
Chile "	19.9	Belgium, 1943	13.5		

Table 22: Crude deathrates in selected countries.

CRUDE DEATH RATES IN SELECTED COUNTRIES 1808-'39

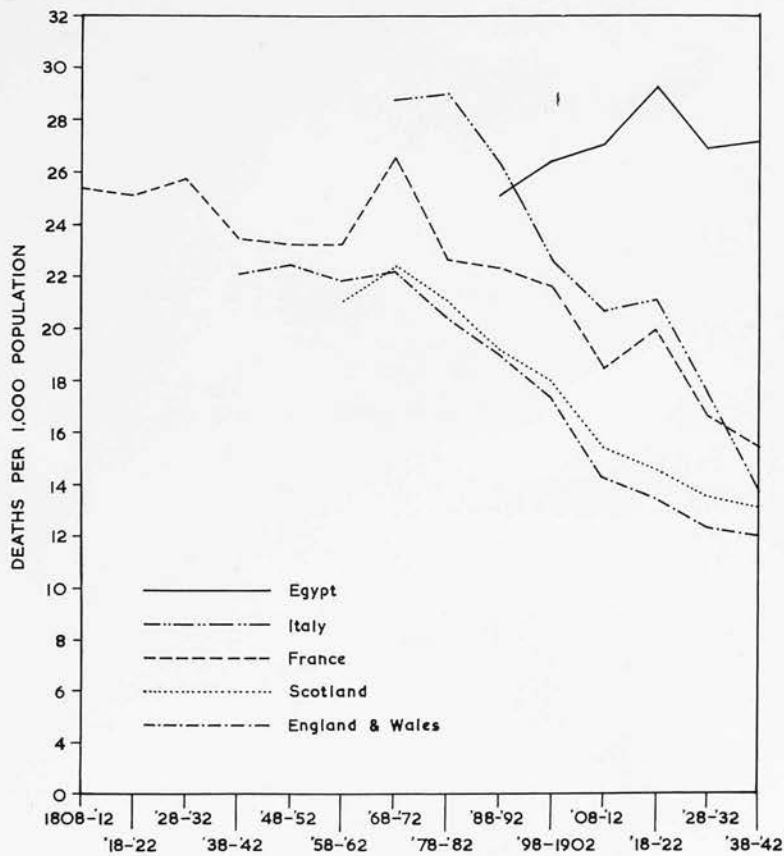


Fig. 10.

Something is to be learned by comparing deathrates of various nations, for presumably the high achievements of one nation might be realised in another if the environment could be improved to an equal extent.

The accompanying chart compares the crude deathrates for a group of nations. Crude deathrates are a fair index of comparative health of a people as well as of longevity, although they fail to take into account many variables that affect mortality, such as age, occupation and sex ratio in the population.

It will be observed that crude deathrates for the 19 countries listed in the above table range from 10.1 deaths per 1000 population in the Netherlands to 28 in Egypt. In general, the highest deathrates are found in countries of Africa, Asia and parts of South America. Industrial nations of Western Europe, Great Britain and the United States and other English-speaking countries have the most favourable rates.

When one considers the relatively high deathrate of Asiatic countries it becomes clear why their high birthrates have not led to a rate of population increase as great as that of European nations for the last two to four hundred years. A considerable part of the increase in the Orient has been cut off by death, whereas during recent

centuries Europe has learned to preserve the life of an increasing proportion of those born. If the present lifesaving devices of the Occident could come into immediate use in the Orient, an unprecedented growth would be realised.

It is interesting also to compare the trend of the death of various nations to see the progress which has been reached in recent years (Chart)

Here, as in the case of birthrates, the gaps are numerous and important. Apart from the fluctuations which may be readily explained, for example: by epidemics, war and crop shortages - the deathrate has been declining in western countries in much the same manner as the birthrate during the last few decades.

Year	Deaths	Deathrate	Year	Deaths	Deathrate.
1906	263199	23.6	1932	431148	28.8
1910	305076	26.4	1934	420756	27.9
1915	349644	28.2	1936	455832	28.8
1918	512100	39.4	1938	429248	26.3
1919	383872	29.4	1939	429033	25.8
1920	369912	28.0	1940	444448	26.5
1922	339114	25.1	1941	440981	25.9
1924	343864	24.9	1942	494358	28.7
1926	377461	26.9	1943	492644	28.3
1928	380376	26.9	1944	472234	26.8
1930	367118	25.1	1945	512003	28.6

Table 23 : Deaths and Deathrates of Egypt.

Fig. /0 shows that the countries of Western society have been characterized by a longterm downward trend in the mortality rate. This may be

attributed to three factors, though the boundaries between them are indefinite and though there is much overlapping - (1) social, including the state of knowledge in relation to the production and use of food, and to the making and use of clothing - (2) sanitary, that is, conditions relating to housing, drainage and water supply, (3) medical, including both the state of knowledge concerning the prevention and care of disease and its application to the public at large.

These three important factors which caused the downward trend of mortality rates in the west, are not sufficiently marked to make a similar trend apparent in Egypt. As a result mortality rates in Egypt remain high.

Death registration.

Although birth and death registration in Egypt was introduced in 1891 it was not made compulsory until August 1912. According to the births and deaths registration act of the latter date, births were to be registered within fifteen days and deaths within twenty four hours of their occurrence.⁽¹⁾

(1) The act applies to foreigners residing in the country as well as to Egyptians. Many of the former group used to take refuge in some consular conventions in order to avoid registration in the usual manner. In fact, many of them still do this particularly with regard to registration of births. Consequently certain figures concerning fertility in infant mortality among this class, as distinct from Egyptian citizens is lacking.

Burial permits also were made compulsory in 1912. They are delivered only on submission to the Health Bureau of the district of a death certificate signed by a medical officer of the Ministry of Health or a general practitioner who happens to be in attendance during the deceased's last illness.⁽¹⁾

Books of official death certificates are supplied free to all authorised practitioners. They are so made up as to assist them in giving all the required data. Special emphasis is laid on the importance of filling in the cause or causes of death carefully.

Errors in the deathrate are, however, generally fewer than in the birthrate, for in the nature of the case it is easier to register deaths than births.

Nevertheless these errors may be fully grasped by comparing the heights of the rates in rural and urban districts.

District	Urban	Rural	All districts.
All Governorates	26.6	17.9	26.1
Lower Egypt Provinces	32.0	27.1	27.6
Upper Egypt Provinces	35.2	23.8	25.2
All Egypt	29.5	25.5	26.4

Table 24: Deathrates in urban and rural districts.

(1) If no medical practitioner was in attendance, the information is provided by a statement from a relative or other person in attendance during the last illness or from the coroner if an inquest is considered necessary.

The unfavourable sanitary conditions prevailing in rural districts of Egypt should result in proportionately higher mortality in them, yet table fails to substantiate this reasonable assumption. The reason for this may be the deficiency of the death registration prevailing in these rural districts.

The main causes of such inadequate registration of deaths may be ignorance of the law, lack of appreciation among the public of the real significance of the legal requirements and the inefficient Egyptian statistical administrative machinery. In fact these three factors are at work in Egypt.

Moreover secret interment is widespread, particularly of infants who lived only for a few days. They are buried in yards and back grounds. These responsible for such illegal practices are usually innocent, as normally they do not know what is required of them. Secret interment has recently been estimated to be taking place at the rate of 10,000 persons per annum. ⁽¹⁾

Age as a factor in the Egyptian death rate.

We have not only a high death rate, but as we see in the following table, the distribution of our death rate is also peculiar.

(1) Dr. El Sayed Sabri "Analysis of the census results in Egypt" In Arabic - page 4.

Age	percent- age of deaths.	Age	Percent- age of deaths	Age	Percentage of deaths.	Age	Percent- age of deaths
under 1	23.50	10-19	4.23	40-49	4.79	70-79	5
1-4	25.29	20-29	4.07	50-59	4.55	80-89	4.99
5-9	6.04	30-39	5.02	60-69	4.84	over 90	7.10

Table 25: Percentage of deaths according to age groups.

Certain features of our mortality conditions stand out clearly in the above table. In the first place we have an all-round heavy death rate. The rate is very high among first year infants, nearly a fifth of them dying every year. In the next age period 1-4 it is also high, yet after this age it decreases until the lowest level is reached in the age period ²⁰⁻²⁹ 10-19 when it comes to be 4.07 per cent. Secondly, our age specific death rates differ from those of the industrial developed countries. We have a general rate twice as high as the English. But for particular ages the differences are much greater. In the age period 1-4 and 5-9 for example the Egyptian rate is five times as high as the English. Our handicap is highest at the dawn of life, and contrary to general belief, it is not in the year of existence but in the years that follow up to the end of adolescence and

even though that we also suffer by comparison with the populations of western countries. Thirdly, the level and structure of our death rate is significant from the point of view of the biology and the economics of the population. They greatly restrain our power to grow and seriously impair our economic strength. This is evident from the following table.

Age	Number of survivors.	
	Males	Females
0	100,000	100,000
1	77,710	79,950
5	64,061	67,775
10	61,390	65,613
20	52,980	55,961
30	44,916	46,660
40	36,970	37,673
50	28,978	29,016
60	20,887	20,793
70	12,931	13,239
80	5,836	6,797
90	1,083	2,157
100	12	22

Table 26 : Life Table survivorship in Egypt.

These figures tell their own tale. By the time

the first year of life is reached in Egypt, nearly a fifth has disappeared by death. By age 5 the loss amounts to 36 per cent; when the 20th year is attained at which a person is ready to shoulder the responsibilities of life only half of the group that started the journey of life together are pursuing it. By age 60 the age of retirement from active life, only 20 per cent of the initial number is surviving. The English experience is on an entirely different plane. Only 10 persons out of every 100 born die in the first five years. After that the loss is very small; 87 persons compared to our 57 attain the age of 20 and 64 of them survive to the end of active career at age 60. The English population has a larger proportion of survivors at age 60 than we have at age 5.

The general implication of the comparison we have made is clear; we, as a nation, are badly handicapped in the race of life by our mortality conditions. From the economic point of view the manner of our growth involves an immense waste of national resources and productive capacity. We nurse, feed, clothe, house the newly born population only to lose 45% of them before they reach the age of 15 at which they can make any contribution to national income.

Environment as a factor in
the death-rate.

Certain circumstances in the environment lead to this high deathrate of the Egyptian population. Chief among them are the following (a) malnutrition, (b) lack of health services and (c) disease.

Malnutrition: Even in the most advanced nations food shortage and poor choice of food among the lower classes is a factor in causing premature death.

Malnutrition with its effects in retarding physiological development and in weakening the organism, making it susceptible to disease is known to be a factor in increasing deathrate. When one considers that the majority of people in the world still suffer from unfavourable conditions for biological development due to lack of adequate food supply, the importance of food shortage to mortality is clear.

The dietary situation of Egypt is very low.

Pellagra, rickets, scurvy and beriberi which are produced by malnutrition are common between the fellaheens as well as the lower middle classes of Egypt. The main reason for this chronic undernourishment of these classes is poverty. Their income is so low that it is almost always beyond their means to purchase or to keep for their own consumption the right quantities and qualities of food essential for their health.

Housing: That mortality varies inversely with

quality of housing is well known. The latter is usually associated closely with the economic status of the occupants, and the density of the population per unit of residential land area or floor space. As will be seen in "later chapter" the housing conditions in Egypt are far from satisfactory. Both in numbers and in quality the people's dwellings leave a great deal to be desired. To give an appropriate description of the appalling conditions in Egypt the present writer takes the liberty of quoting some of Miss D. Warriner's description "to speak of housing conditions is to exaggerate; in the Egyptian village there are no houses! The fellaheen inhabit mud huts, built by making a framework of sticks, usually cotton sticks, and plastering it with mud. The hut is a small enclosed yard where the family and the buffalo live together with a smaller inner room with a roof but no window and a sleeping roof where chickens, rabbits and goats are kept. On a slightly better level are houses built of mud bricks. These are larger and are equipped with windows with wooden frames and shutters. Houses in this style are still filthy and fly-infested, but they represent the only feasible form of improvement because the cost of building in brick is prohibitive".

Of course there is an element of exaggeration

in Warriner's description, yet there is also a truth element.

Density: Whether or not there is a relation between mortality and population density, and if, so, what its nature is, are questions raised long ago and studied subsequently by several authorities in the west. Evidence that mortality increases as density increases has been secured in some cases, leading to the establishment of Farr's law in 1843 in which he put forward his wellknown formula expressing the relationship between density of population and mortality rate in a mathematical form.

The investigations described in McGongle's book "Poverty and Public Health" in 1936 of the effect on deathrates following the transference of 710 individuals from a slum district to a new housing estate in Stockton-on-Tees, provide some valuable data. After removal, the standardized deathrate rose by 46 per cent over the mean for the same families in the previous quinquennium. Remember that these people dwelt in the first quinquennium under slum conditions and during the second in the best possible environmental circumstances.

Nevertheless, to ascertain the degree of overcrowding among the Egyptian lower classes is extremely difficult at present. The statistical data bearing on this important subject is very scanty

and difficult. Yet within the author's knowledge only one private investigation was carried out in 1935 to ascertain, among other things, the housing conditions of the working classes in Cairo. Although limited in size this inquiry will help to throw some light on the housing conditions of the most important city of the country. Twenty per cent of the members of every industrial labour union in Cairo at the time were chosen at random to form this sample. Over 2,000 workers representing about 40 unions were approached. In quoting figures for this group we must remember that their conditions are bound to be better than among the rest of the workers or the fellaheens. From the detailed information obtained in the inquiry it was found that:-

20%	of persons of the sample were living	in one room.
30%	" " " " " "	4 in a room.
48%	" " " " " "	3 in a room

These appalling conditions of congestion must be more dangerous now after the years of the last war when the building of new houses was nearly stopped. This is the price which our working classes and their families have to pay for their poverty. The unavoidable result of such conditions is their illhealth and premature death.

Infant Mortality.

Infant mortality is one of the most sensitive barometers of social conditions. The infant is extremely vulnerable to most causes of death. Consequently the number of infant deaths is very closely correlated to the quality of health protection the community affords its members. The evaluation placed on the individual human life, the knowledge and education of parents, the quality of the physical environment enjoyed by the population, the effectiveness of public health and social legislation - these are collectively and sensitively measured by the level of infant mortality.

Compared with other countries Egypt has one of the highest infant mortality rates in the world (Table).

Country	Rate	Country	Rate
A. <u>Africa:</u>		D. <u>Europe:</u>	
Egypt, 1945	152.8	Belgium, 1947	88
Union of S.Africa, 1947	35.2	Spain, 1947	76
		France "	66
B. <u>America:</u>		Italy "	82
Canada, 1947	45.5	Malta "	120
U.S.A. "	32.0	U.K. "	43
Argentina "	79.0	Sweden	25.2
Mexico, 1944	96.0	Switzerland	39.
Costa Rica, 1947	84.4		
C. <u>Asia:</u>		E. <u>Oceania:</u>	
Ceylon, 1947	101.	Australia, 1947	28.
India 1945	150.	New Zealand "	25
Japan, 1943	87.		
Korea	115.		

Table 27 : Infant Mortality in selected countries

From this it will be seen that the infant mortality rate⁽¹⁾ in Egypt compared unfavourably with that in other parts of the world. It is higher even than in such countries as India, Chile and Ceylon. The only country that had a higher rate than Egypt was Malta.

The general trend:

Egypt is the only country for which two sets of infant mortality rates are published in the International Statistical Yearbook of the League of Nations. One of these is for the whole country and is very much lower and less reliable than the other. The other series of rates is for localities where Health Bureaux are established. These are offices each supervised by a Medical Officer of Health, who enforces public health regulations, inspects death certificates and acts as the local coroner; in the absence of a general practitioner he certifies the cause of death. In Non-Health Bureau areas these functions are under taken by a layman or the village barber. Consequently only Health Bureau areas publish figures showing the causes of death.

(1) The usual method of measuring infant mortality is by relating the number of children of less than one year of age dying in the course of a year to the number of live births registered in the same year.

The localities with Health Bureaux are, generally speaking, the most advanced in the country. Illiteracy, poverty and bad sanitation are less than elsewhere. Their figures for births and deaths are noticeably higher as they are more representative of the facts, because the administrative machinery for collecting statistical data is more elaborate. This is clearly shown in table 28 which compares the infant mortality rates in these areas since 1941.

Area	1941	1942	1943	1944	1945
(a) Governorates and Capitals of	197	230	231	214	217
Rural towns	242	222	206	191	198
Villages with Health Bureaux	147	196	175	172	179
(b) Villages without Health Bureaux	127	137	124	118	116

Table 28: Infant mortality in areas of Health Bureaux as compared with that of areas which have not Health Bureaux

The two series show that Health Bureaux areas have always had a higher infant mortality rate. The explanation is twofold. Firstly in small remote villages whose rates constitute nearly two thirds of the total, many infant deaths are never notified. Secondly, by far the greater number of the Health Bureau areas are urban. It is universally establish-

ed that urban districts have higher infant mortality rates than rural districts in all countries.

It is clear also from the above table that the infant mortality rate in Egypt does not show any sign of declining in recent years in spite of the improvement which is probably taking place due to the increased efficiency of the public health administration and particularly the movement of recent years towards child welfare centres.

On the other hand nearly all countries show a steady decline over a period of years, although the scope for improvement in Egypt was much wider than in other countries in view of the relatively higher initial level of her rate.

A complete picture of the relative decline of the infant mortality rate in over ten countries between 1871 and 1940 is furnished in table 29 .

Table /

Quinquennium	New Zealand	Holland	Australia	Norway	Sweden	U.S.A.	England Wales	Canada	Scotland	Egypt
1871 - 75	102	-					153		127	
1876 - 80		-					145		118	
1881 - 85	91	181	125	99	116		139		118	
1886 - 90	84	175	119	96	105		145		121	
1891 - 95	88	165	109	98	103		151		126	
1896 - 1900	80	151	112	96	101		156		130	
1901 - 5	75	136	97	81	91		138		120	
1906 - 10	70	114	78	-	-		117		112	
1911 - 15	54)		70	-	-		110		113	
1916 - 20	49)	95	65	-	-	93	90		99	
1921 - 25	43	64	58	52	60	74	70		92	144
1926 - 30	37	56	52	49	58	66	68	93	85	152
1931 - 35	32	45	41	45	50	59	62	75	81	166
1936 - 40	32	37	39	39	42	51	55	64	76	196

Table 29 : Total Infant Mortality Compared by Period in selected countries.

Such lowering of infant mortality, since about the turn of the century, as is shown in the above table, has been one of the greatest achievements of modern times. When we inquire into the causes of this improvement we find two groups of factors. In the first are many agents of a general social nature - housing conditions, nutrition, education of parents, etc. - which accompany a rising standard of living. The part played by such factors in the future will, as in the past, be mainly governed by economic developments of a national and international character over which the medical profession can, at present, only exercise a limited measure of control.

The second group of factors, however, are specified in character, for they depend upon advances in the principles and practice of medicine itself. It is in this aspect of social betterment that medical administrators and practitioners can play a dominant part if they make full use of all the help that is open to them.

The vast knowledge upon contagion, the microbial parasites of man and animals, and the protective immunological reactions which often follow infection, stands as a tribute to the co-operative labours of a host of investigators in many countries. The seed sown by these

pioneers is gradually coming to fruition, and in no branch of medicine is the harvest richer than in the prevention and treatment of the infectious diseases of children.

Causes of excessive infant mortality in Egypt.

(a) Social and economic causes:

They are poverty, bad housing, poor food, too frequent births, and all other conditions which make it difficult or impossible for a mother to give her baby good care.

Poverty: The poverty we are interested in here could be defined as the privation of one or more of the basic necessities of health and, ultimately, of their prospects of life. Mal-nutrition, defective housing conditions,⁽¹⁾ overcrowding and unsuitable clothing have, in the long run, a devastating effect on vitality and ability to resist diseases. If that is true among adults it should be more so as regards children and particularly those who are under a year old. The latter group is much more sensitive⁽²⁾ than adults to their conditions of life. Their vitality and stamina are influenced not only by the direct effect these adverse conditions may have on them,

(1) "Infant Mortality in Scotland" Report. Dept. of Health for Scotland p. 51.

(2) M. Woodbury "Infant Mortality in the U.S.A." The Annals of the American Academy, 158: 14-100, 1936.

but also indirectly through the effects they have on their parents' health. A semi-starved mother can hardly be expected to bear and rear a healthy child.

It is an established fact that infant mortality varies greatly from social class to social class. It is also known that the higher the number of children is the proportion that die.

No. of children born in each family.	No. of deaths per 1000 children born.	No. of children born in each family.	No. of deaths per 1000 children born.
1	122	9	225
2	140	10	246
3	162	11	267
4	176	12	300
5	189	13	331
6	199	14	364
7	206	15	394
8	214		

* Table 30 : Child Mortality in relation to size of family.

If conditions are so serious and last so long that one or both parents fall victim to an infectious

* Data as from England and Wales as of 1911. Data from "Fertility of Marriage", Part 2 pp. 50 and 51. Great Britain Census Office, London, 1917.

disease their off-spring would be doomed from the outset. Hereditary factors would then be much more influential. The infant's premature death would not be so much the result of their malnutrition or their overcrowded conditions as that of their parents. Heredity, therefore, perpetuates the malignant effects of poverty and gives it a much higher tempo.

(b) Pathological causes: Four main groups of diseases are responsible for most of Egyptian infant mortality. Diarrhoea and Enteritis are the most fatal, then come the congenital, respiratory and finally the infectious diseases, see fig.

Disease Groups	Percentage of total.
Diseases of the Alimentary system	56%
Congenital Diseases	30.6%
Respiratory Diseases	8%
Infectious Diseases	.4%
Other Diseases	6%

Table 31 : The relative fatality of certain diseases responsible for infant mortality in Egypt.

(c) Climatic Factors: It may be interesting to shed some light on the question of whether climate in Egypt is an influential factor in its high infant

PATHOLOGICAL CAUSES OF INFANT MORTALITY IN EGYPT

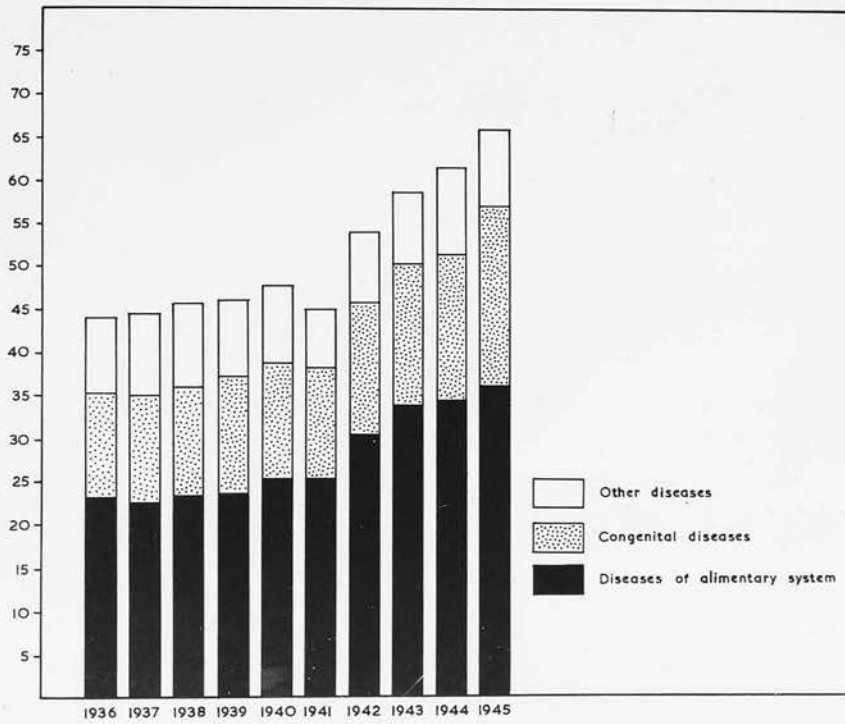


Fig. 11.

mortality.

The country lies almost entirely within the North Temperate Zone between the parallels 22N and 32N. In the Delta the temperature ranges from 2°C to 43°C between February and July. In upper Egypt the range is from 7°C to 45°C.

Though the summer heat is great it is seldom oppressive, being accompanied by a refreshing northerly breeze and the air being very dry.

A study of the monthly numbers of infant deaths reveals that the majority occur during the hottest months of the year. As is shown in Table the average number of deaths in July is more than double that in December.

Months	No. of deaths.	Months	No. of deaths.
January	6861	July	17711
February	6141	August	15544
March	6327	September	11280
April	6350	October	8115
May	11884	November	6431
June	17025	December	6697
	Total		120366

Table 32 : Monthly variations of infant deaths in Egypt

It is clear from the figures above that the heat

of the summer in Egypt must influence infant mortality. During the summer months of May, June and July over twice as many die as during the spring months of February, March and April.

If we examine the cause or causes of this seasonal fluctuation we shall find that one and only cause was diarrhoea. The number of infant deaths from this cause rose sharply from January until it reached its peak in July and August, after which it fell equally rapidly as is clearly shown in Diagram 2.

A glance at the diagram leaves us in no doubt that temperature and diarrhoea are related. The fact that flies are a more serious menace to health in the summer months in Egypt suggests that they are probably the intermediary through which high temperature precipitates diarrhoea.

Stillbirths.

In the preceding pages only infant deaths occurring after birth have been considered, but this does not tell the whole tale of infant mortality in Egypt, for there is known to be enormous wastage of life between the time of conception and death - i.e. stillbirth is one of these wastages.

A stillborn child is one that has issued from its mother after the twenty eighth week of pregnancy and which did not at any time after being

THE RELATION BETWEEN DIARRHOEA
AND TEMPERATURE IN CAIRO

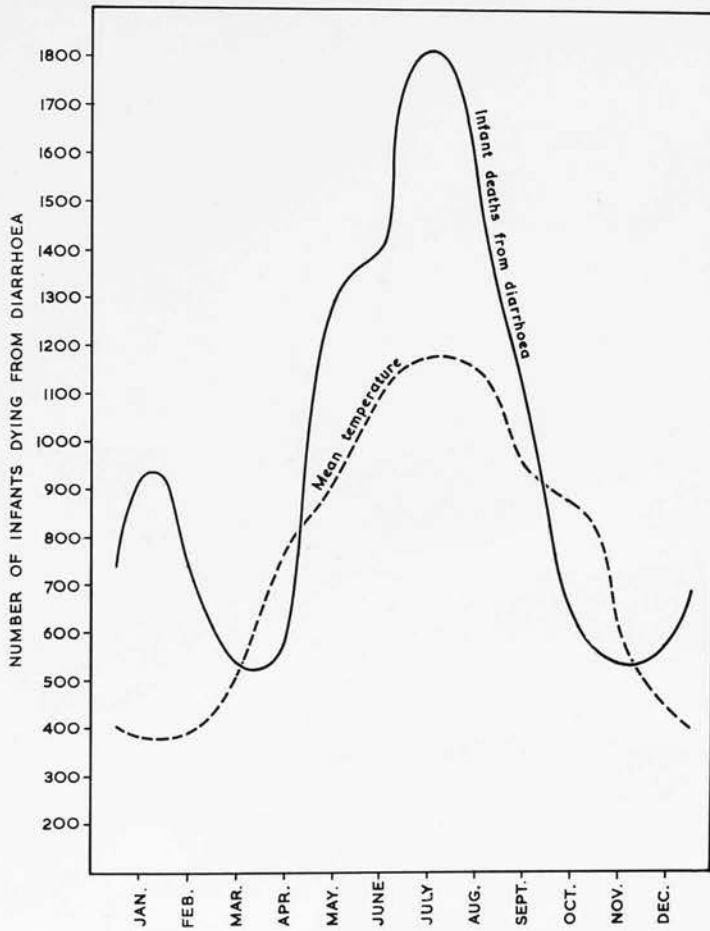


Fig. 12.

separated from its mother breathe or show any signs of life. (1)

Owing to the lack of reliable statistics of stillbirths in Egypt, it is impossible to form an exact estimate of it. Many early abortions no doubt pass unnoticed and there is no law to enforce their registration. (2)

Nevertheless, the published stillbirth rate for Egypt before the last war was 7.3 but the monatal deathrate per thousand total births was 19. Compared with other countries this rate is very low although Egypt's infant mortality is one of the highest in the world. (3)

Any careful study of the Egyptian stillbirth figures will leave us in no doubt that its registration is inaccurate and that not all cases of stillbirths are reported. (4)

(1) Crew: "Measurements of the Public Health" p. 207.

(2) Accurate information on the incidence of stillbirths exists only for a few countries, and only for a few years. Registration of stillbirths has been compulsory in New Zealand since 1913, in Holland since 1925, in Canada since 1926, in England and Wales since 1927 and in Scotland only in 1939.

(3) A high ratio of stillbirths is almost invariably associated with a high infant mortality rate - for the conditions associated with high stillbirth rate are in general the same as those associated with high infant mortality, namely, poverty, poor housing and sanitation, overcrowding, relatively high birthrate and poor diet. All of these must clearly affect the health of the mother.

(4) See the health statistical book of 1944 (Arabic)

Three considerations make this conclusion inescapable. The first is that the majority of the Egyptian population is ignorant and has a lack of appreciation of the real significance of death registration especially of stillbirths. The second consideration is that the published rates for all big towns are suspiciously lower than those for big towns in other countries; this notwithstanding the fact that the infantile mortality rate together with almost all other specific death rates for higher age groups in Egypt are practically the highest in the world. The third consideration is that the stillbirth rates in the areas for which figures are available vary a great deal. Moreover their rates fluctuate abnormally from year to year.

Governorates are the only towns for which figures are published. In 1927 the rate in Suez was 16.6 but in Admiatta it was 33.5 per thousand live births. In 1938 it was only 11.1 in Alexandria and as much as 37.3 in Damietta. On the other hand between 1927 and 1928 the rate in Suez increased by nearly 64 per cent and in Alexandria it decreased by nearly 35 per cent.

Maternal Mortality.

As for maternal mortality, the figures must be equally shocking, because the essential factors that lead us to believe in this assumption are already in

existence.⁽¹⁾ Some of these factors being intrinsically vague or incapable as yet of accurate measurements, other being more definite in character, their influence can be assessed with some degree of exactitude. The former include environmental conditions, residence, character of population, housing and overcrowding, personal conditions such as health physique, means and cleanliness. The latter include age and purity of mother, seasonal variations, legitimacy, antenatal care, place of confinement, attendant at birth, nature and degree of operative interference.

Many, if not all of these factors, are by no means favourable in Egypt. Moreover the majority of confinements are still attended by uncertified and ignorant midwives, and puerperal fever is rife. In the period 1934-38 in Egypt something like 5000 lives were lost through this cause alone.

Now let us put the simple and direct question "Is the problem of maternal mortality in Egypt insoluble"?

The answer is certainly in the negative, for the problem has already been solved in some countries. Admittedly, there are important details and aspects of the subject which require further investigation and elucidation. But these for the most part are

(1) No accurate statistics are available in this matter.

concerned with difficult scientific questions, such as the etiology of toxæmias of pregnancy, virulence of infection organisms, resistance of the individual to infection.

The retarding influence is the difficulty in bringing into full co-operation the many different services and agencies concerned with maternal welfare that have arisen as a result of the manner in which maternal and infant welfare has developed in Egypt. The problem is very largely a question of organization and future health planning.

Nevertheless maternal mortality in Egypt can never be reduced to zero. It is important that the lay public should appreciate this fact. A price must be paid for motherhood. The most that can be accomplished is to bring it down to the "irreducible minimum". This figure has not been determined, nor can it possibly be uniform for all countries, nor for different areas of any particular country.

Morbidity.

Our high deathrate is inescapably associated with a high rate of morbidity. For one man who succumbs to a disease in a year there must be five to ten who suffer from it so that the prevalence of sickness may easily be five to ten times as large as the incidence of mortality. Among the chief causes of death are diarrhoea and enteritis in children, congenital debility, jaundice and scleroma rickets, bronchitis, pneumonia, senility, nephritis, heart disease and tuberculosis.

But the reported causes of death do not tell the important part of the story of illhealth, for the most widespread and enervating diseases are rarely put down as the cause of death.⁽¹⁾ These diseases are principally four, trachoma affecting 90 per cent and bilharzia and ancylostoma affecting over 90 per cent and pellaagra for the extent of which no figures are known.⁽²⁾ Pellagra is definitely a disease due to deficient diet. As for trachoma or granular eyelids some authorities point to its close association with poverty and hint at

(1) A detailed study of the causes of death yields very little additional information as to the distribution of the deaths by age and cause partly because it applies only to one quarter of the total population. Those living in areas with health bureaux and partly because of the great inaccuracies in registration as most of the information comes in after burial from some relative of the deceased who is probably poorly qualified to give the correct data.

(2) See "L'Egypte Contemporarium No. 767"

its being due, at least partially, to poor diet and low resistance. But the worst effects are produced by the worm diseases, bilharzia (Bloodfluke) and ancylostoma (hookworm), which in one form or another are spread and sustained by the irrigation waters and damp soil. Because they go barefoot and drink canal water most peasants are infected as children and harbour one or both diseases all their lives. Diseases produce anaemia and deplete the vitality of the labouring classes so as to reduce ambition and take from life much of its vigour and joy. One of the worst effects is slowing down of nervous reactions. Doctors working in the hospitals set up by the government to combat specifically these two modern plagues of Egypt, speak frequently of the mental sluggishness and apathy of those infected. Cures may be effected, but no immunity is established so that re-infection is very common. That the low vitality caused by bilharzia and ancylostoma produces easy victims for numerous other diseases seems to be undoubted. When it is remembered that 80 per cent of the peasants have one or both of these worm diseases and that 90 per cent of the population have eye diseases, and that there are many other diseases as well, it must be apparent that there are large numbers afflicted with several diseases at once and that as a consequence, their miserable condition

is greatly aggravated.

Causes of Diseases: Diseases in general can be classified according to their relative importance, their symptoms, methods of transmission, geographical distribution and so on, but the object of including some account of them in this chapter is not to write a medical chapter but to emphasize the relation of disease to the modes of life of the people, to their food supply, and to populations in the present and the future. Therefore, in the following account they are arranged in groups in accordance with their underlying causes.

Firstly, there are the diseases due to the environment coupled with primitive conditions of life in agricultural communities. These are carried by insects, which are in turn dependent mainly on climatic rather than human conditions, and accordingly are subject to a remote form of control. In urban conditions diseases tend to disappear particularly if there is a piped water supply and if the breeding of domestic mosquitoes is suppressed. They include malaria and yellow fever carried by mosquitoes which must have lived mainly in water.

Secondly, there is the large group of diseases associated primarily with insanitary conditions. These include the lice-borne diseases, typhus a relapsing fever; bilharzia which is

carried by watersnails and of great importance in Egypt on account of insanitary habits, trachoma and other diseases associated with flies; the diseases carried in water and food such as typhoid; the diseases associated with dirt or overcrowding particularly tuberculosis and leprosy; and infections with parasitic worms.

Thirdly, there are some other diseases which are caused neither by special factors of the environment nor by insanitary conditions. Important among these are the venereal diseases in the spread of which ignorance is an important factor.

Fourthly, there is the group caused by defective diet, namely pellagra and scurvy. Malnutrition, however, is now recognized to be far more important than merely the direct cause of certain diseases. It is a factor in the prevalence of tuberculosis, probably acts adversely in malaria and is important in relation to hookworm disease. Many authorities would agree that a general improvement in diet among Egyptians would have more importance in improving health as a whole than the curative medicine which exists to-day.

Malaria: The loss of manpower due to malaria is enormous in Egypt; in some areas a large proportion of the population loses several weeks of working time every year. Therefore malaria is one

of the most important diseases in Egypt. In the words of the recently appointed Malaria Board in Cyprus, "Malaria is the fundamental reason for the backwardness of many village areas and without a much higher degree of control than at present exists. Progress in education, agriculture, and social welfare generally in the areas affected would be impossible since the people, owing to general debilitation caused by malaria and conditions arising therefrom, are physically and morally incapable of taking advantage of such social services and opportunities for advancement as are provided." This passage, though written with reference to Cyprus, might equally apply to any of the eastern Mediterranean countries (Egypt included). Only in the driest desert areas is malaria absent, and even there the presence of surface water in oasis and centres of population is invariably accompanied by the disease. As for the disease itself, it is caused by microscopic mosquitoes which have sucked the blood of infected persons. An anopheles mosquito sucks the blood of a person who has malaria; the parasites swallowed with the blood are male and female. Almost at once after their entry into the stomach of the insect, they conjugate and produce large numbers of offspring which, after about eight to fourteen days, penetrate the poison glands of the mosquito. When the infected mosquito bites a person

it injects these parasites into his body where they soon find their way into the blood cells. During the following ten days or so the parasites multiply exceedingly and begin to generate enough poison to cause fever, which often comes with shivering and passes off with sweating. Malaria, in natural conditions, is never conveyed in any other way than by the bite of infected anopheles mosquitoes. The attacks of fever usually come every day or every other day, and unless proper treatment is carried out the consequences are very unpleasant for the victim. Anaemia, debility and enlargement of the spleen are the chief results, and the disease tends to be chronic with spells of freedom from fever followed by relapses. Sometimes the disease runs a rapid and fatal course, as it occurred during the last war in Upper Egypt where it has been associated with the northward spread of the most important malaria vector of tropical Africa, *Anopheles gambia*. This epidemic started at Aswan in 1942 and reached as far north as Asint late in 1943, increasing in intensity all the time. Whatever the origin of this invasion there is no doubt of the severity of its effects. Statistics are incomplete but perhaps tens of thousands of deaths have resulted and there has been a vast amount of debility. The high mortality was apparently caused by the virulence of the first attack, the frequency of relapses, the

abundance of the insect vector, and the lack of early treatment all connected with a serious state of malnutrition among the fellahin of Upper Egypt.

Cholera. Cholera belongs to the group of diseases caused by special kinds of microbes which are swallowed and then multiply in the intestine. The source of infection is almost always a person who has the disease or is recovering from it, so that as cholera is a short and dramatic illness which is easily recognized, there is seldom any excuse for failing to take precautions.

The last occasion on which cholera was epidemic in Egypt was in 1902 when it appeared in a group of pilgrims on their way back from Hezaz; since then there have been only five cases in 1918. The epidemic, which started in July 1902, declined in October and by January 1903 all sporadic cases had ceased. The total number of declared cases in that epidemic was 40314 with a fatality rate of 85 per cent, i.e. 34595 deaths⁽¹⁾

The second epidemic started in Egypt in September 1947 at El Korein, a village in the Sharkia province on the western bank of the Suez Canal. During the first week, infection spread from its focus to the neighbouring provinces of

(1) The Lancet Vol. 2 - November 1947.

Dakahliya, Minojiya and Kahobiya in lower Egypt, and to the Canal Ports of Ismailia and Suez. By the end of the second week, all the Delta provinces except Beheira had become involved as well as the governorates of Cairo, Damietta and the Canal (Port Said to Ismailia) and despite the stringent measures enforced to avoid such extension, the province of Giza in Upper Egypt. In the third week, all six Delta provinces were infected; the governorates of Cairo, Damietta and Canal continued to record cases, but in Upper Egypt the increase remained confined to Giza.

The fourth week saw the curve of incidence rising to attain a twenty four hours' peak figure of 1022. All governorates of Lower Egypt including Alexandria were caught up in the flowing tide of infection; Beni-Suez and Kena in Upper Egypt added their quota to the week's total of 4566 cases with 205⁽¹⁾ deaths.

During the fifth week the epidemic reached its greatest height with 5976 cases and 2933 deaths to which number Dakahliya Province with 367 and its villages stricken, contributed 1703 cases and 1128 deaths.

The sixth week showed the first indications of the epidemic's decline. It was true that during

(1) "Chronicle of the World Health Organization" W.H.O. Vol. 1. No. 10, 1947.

the week all provinces and governorates in Lower Egypt were reporting fresh cases and that the disease had by this time made its way into Fayoum and the Giza Provinces of Upper Egypt, but clearly in so far as the Nile Delta was concerned the epidemic had spent its force.

In the seventh week case numbers decreased daily with the result that although with Minya newly invaded, Upper Egypt retained only Aswan Province without infection, the week's total of 2218 cases was less than half that of the previous seven days and little more than a third of the peak figure of a fortnight before. Moreover of the 4000 villages considered infected when the epidemic was at its height, only 88 then remained infected.

During the eighth week under review the epidemic produced 20,877 cases with 10265 deaths, thus evidencing a case fatality of 49 per cent. Forty five years ago, when Egypt experienced its first cholera epidemic and when all provinces in both Upper and Lower Egypt were involved, there were 40613 cases and 34595 deaths, i.e. an apparent case fatality of 85 per cent.

In comparing the 10265 deaths of current outbreak, however, with the 34595 of the 1902 epidemic, it has to be remembered that the present population in Egypt is almost double that of 1902. The deathrate for the 1947 epidemic is therefore seven

times less than that for the 1902 outbreak.

In connection with the 1947 epidemic it has to be observed that in spite of repeated re-introduction from villages, the disease has failed to establish itself in any of the towns provided with satisfactory water supplies and adequate sewage disposal systems. It is also noteworthy that as soon as 80 per cent of the population had been inoculated with anti-cholera vaccine, overall incidence began to fall, but whether such decrease can be ascribed to the results of vaccination or to spontaneous decline characteristic of each previous cholera outbreak in Egypt, it is too difficult to say.

Bilharzia: Some would regard bilharzia as a disease of the natural environment since it is dependent on the existence of water snails which are abundant in Egypt. It is given a prominent place here among diseases caused by insanitary conditions of life, however, because its wide distribution among agricultural peoples is due primarily to the habit of depositing excrement and urine in canals or on their banks. These minute, active little animals swim about in the water, up and down, to and from the surface. They will perish absolutely in about 48 hours unless they come in contact with a human skin which they then bore through and enter the blood stream. They soon develop into worms, which, in turn, lay eggs and these are discharged

from the diseased body either in the urine or in the faeces. If the eggs get into the water they hatch within twenty minutes and discharge "miracidia" which swim freely until they find the snails which they enter and metamorphose again into "cercaria".

Bilharzia is, therefore, a disease of irrigated lands. Medical authorities in Egypt are inclined to think that the perennial irrigation system is largely responsible for the spread of Bilharzia and also of hookworm, which flourish in moist places.

Both the diseases could be largely eliminated if sanitary habits could be taught the people, but in the present low stage of advancement this seems to be the council of perfection. That there is a relation between the effect of these diseases and irrigation developments is evident when a statistical study is made of the irrigation history and the male:female ratios. Where there has been the most irrigation the men are fewest, which may be ascribed chiefly to the bilharzia spread by the waters to the men labouring in the fields. In two of the seven provinces of Upper and Middle Egypt, which up to the present have been under basin irrigation and are therefore drier than otherwise, the ratio of men to women shows an actual rise from 1907 to 1927, but a decided loss in all Lower Egypt, most particularly in the lowest provinces. Likewise

it can be demonstrated that the bitharzia deathrate correlates highly with low elevation of valley land, and that the male deathrate from this disease has a high correlation with low male ratios in the population.

As to the effects of these diseases upon the fellaheen of Egypt, it is evident that the bilharzia and hookworm which harass so many leave them too weak to carry on with vigour. In the words of Dr M. Khall Abdel Khalig Bey, Professor of Parasitology in Fouad, the first University, Cairo, the landlords pay the people "a wage gauged according to their weakness"⁽¹⁾. Their weakness prevents them from having the energy to migrate. The victims want to take no risks of not getting at least some little thing to eat, so they stay close to the family. In this way the disease to which they are especially subject, may be said to have produced a generation of Egyptians who, fixed to the soil, consume much more than efficient healthy labourers would for the same amount of work, and to be the cause of rapidly increasing population, which is unable to support itself except on the very lowest standards. Thus the fellaheen are victims of a vicious circle, ignorance, poverty and

(1) Dept. of Public Health "The Diseases of Incylostoma and Bilharzia in Egypt", Cairo, 1927.

disease, each a cause and each an effect. Because they cannot help themselves they tolerate without complaint conditions which more energetic peoples would revolt against.

Eye Diseases: Eye infections especially trachoma are almost universal - their omnipresence is one of the facts of Egypt which impresses itself first and most strongly upon the visitor. A doctor in the Faculty of Medicine of Fouad I University, Cairo, had estimated roughly that 90 per cent of the Egyptian population have serious eye diseases.⁽¹⁾ With regard to trachoma, medical opinion, as yet without complete knowledge of the mode of infection, is tending towards the belief that it has a very close relation to the general health and probably to a deficiency in diet, particularly of vitamin A which is found abundantly in butter, cheese, eggs, whole milk, whole wheat, bread, etc. With widespread anaemias and diets markedly lacking in fats, the eyelids of Egyptian fellaheen seem to furnish the ideal environment for trachoma for, as Dr. B. Franklin Royer says, "Nor if we consider the food habits of the peoples most affected, can we escape the thought that if this disease is due to a specific virus it in some deliberate way shows

(1) See "Arabs Oil and History" by K. Roosevelt, p. 93.

a selective affinity for the poor and underfed of the world, not exhibited by any other transmissible virus whose habits are known."⁽¹⁾ More space for the people to live, better food, and less anaemia might also mean less trachoma.

Typhoid: Typhoid fever is the outstanding example of an environmental disease: where living conditions are poor, personal habits filthy, public sanitation or supervision of food supplies faulty, there typhoid fever will flourish.⁽²⁾ On the other hand, where the highest standards of modern sanitation and hygiene are achieved, it is an eminently controllable disease.

It is caused by a bacillus which enters the body in the same way as the cholera bacillus. The illness usually appears about ten days or a fortnight after swallowing the infected food or drink, but cases have been recorded in which the onset has been within five or six days, and others in which it has been delayed till three weeks after exposure to infection. Flies are held to be responsible for the spread of much of the typhoid and bacillary dysentery in Egypt, though the former

(1) "Is Trachoma a Deficiency Disease?" by Dr. B. Franklin Royer at Journal American Medical Association, April 14, 1926.

(2) "Infectious Diseases" B. Christie, p. 122.

is commonly, and the latter may be, transferred in drinking water also.

The minor enteric ailments, such as diarrhoea and enteritis, attract less attention in Egypt, but are undoubtedly a main cause of debility. They have a particular importance in connection with infant mortality as was mentioned before.⁽¹⁾

Tuberculosis: Unlike malaria, tuberculosis in Egypt is more common in towns than in the country. Most medical experts believe that the disease is spreading from the towns to the rural districts owing to infection being carried by villagers who have contracted the disease while working in the towns. No accurate survey has yet been made of the incidence of tuberculosis in rural areas⁽²⁾ but even if the disease is not so common in the villages as some experts believe, it is undoubtedly increasing and is threatening to become a very serious problem.

Tuberculosis may attack any part of the body but in the great majority of cases the lungs or bowels are specially affected. The disease is caused by a microscopic bacillus which enters the body by the inhalation into the lungs. Tuberculosis of the bowel often occurs as a complication of the

(1) See Infant Mortality page

(2) Especially of the areas without Health Bureaux.

lung disease, but it also may attack persons whose lungs have not been affected. In the latter group of cases the infection is usually contracted through swallowing food which has been contaminated with the sputum of a person suffering from tuberculosis of the lung. Another likely way of conveying infection is by using the earth from a courtyard for scrubbing the feeding utensils. The earth is often contaminated by the sputum of persons who have tuberculosis of the lung: the sputum adheres to the vessel which is being "cleaned" and so the food becomes infected. Apart from infection with tubercle bacilli there can be no tuberculosis but although the bacilli, which are the seeds of the disease, are its essential cause another factor of almost equal importance is the soil on which the seeds are sown. The soil is the human body; if this is healthy and well nourished the seeds do not thrive unless they happen to be specially virulent or exceptionally numerous. Thus it happens that in communities consisting of people who are well fed, who live in well ventilated rooms, and are cleanly in their habits, the disease tends to disappear surely and steadily. Very few people escape infection with tubercle bacilli, but they can resist ordinary doses of the germs if their bodies are in good fighting trim.

For this reason tuberculosis can be regarded

as a "key" disease; measures which are successful in its control will also prove effective against many of the other deadly diseases. If the people of Egypt were properly nourished, if they avoided living in the same room with persons who cough and sneeze, and if they took precautions to avoid swallowing infection with their food and drink, their average duration of life would be doubled.

But here again we must get to the root of the matter - proper nourishment and proper standards of hygiene are impossible so long as the economic standard of living in Egypt remains at its present low level.

Ruberculin studies conducted by Abbazy Bey in Cairo and Alexandria in 1934 revealed positive reactors to O.T. (1-5000) amounting to 96 per cent in adults and 60 per cent in children. In a survey of children under 15 years at Luxor, 49 per cent were positive, but in a small village not many miles away the percentage was only 15. Considering the dosage used, these figures are probably underestimates. Selim, in a thesis on "Tuberculosis in Central Egypt" quoted by Dr. Raouf Hassan, details an investigation into 5,194 persons of all ages in Cairo, Alexandria, Bevir-Suez, Tanta, Fayoum and Giza in which he found that in 2408 persons above the ages of 15, 53 per cent were positive.

Regarding the tuberculosis services in Egypt

we find that since 1931 the Ministry of Health has created a special department for the study and control of chest diseases. By 1945 Dispensaries were in operation throughout Egypt - three in Cairo, ten in Lower Egypt and five in Upper Egypt, or eighteen in all. During 1944 the attendances at tuberculosis dispensaries numbered just over 100,000; of these 6.3 per cent were found to have active tuberculosis and about 2 per cent of these were in need of institutional treatment. An interesting feature of the Egyptian tuberculosis service is its adherence to the original recommendation in the Astor Report (Great Britain 1911) that a number of beds for observation purposes should be maintained at the dispensaries.

The aim of the government is to have one dispensary for every 300,000 inhabitants, and for each dispensary to have 10 beds attached to it. It is also proposed to have adjoining each dispensary a pavilion to accommodate some fifty patients of the more advanced type.

Sanatorium accommodation is available in Cairo, Alexandria and at Zeitoun near Cairo there is a good preventorium. Attempts at developing small village settlements have been made at Marz and at Giza, both near Cairo. An important recent addition to the facilities for the treatment of tuberculosis in Egypt is the acquisition of the

former American Military Hospital at Huck-Step near Cairo where there will be accommodation for about another 1100 patients.

In summary it may be said that Egypt in 1945-46 had just over 2000 deaths per annum certified and no more than five thousand odd cases on the tuberculosis registers. Only some 11400 beds were available for the treatment of pulmonary and non pulmonary cases - that is approximately one bed for every 12,000 of the population.

Leprosy: In Egypt it is roughly estimated that leprosy affects only 0.3 per cent of the population.⁽¹⁾ This figure indicates that it has ceased to be a major factor since arrangements have been made for segregating lepers on farms where they can lead a normal existence, or into leper hospitals when the disease is advanced. It is caused by a bacillus which is very similar to the tubercle bacillus. Infection is conveyed by contact with lepers, and an important point is that recent acute and severe cases are much more dangerous to the community than the old burnt-out cases with disfiguring mutilations or the mild cases of leprosy affecting the nerves. Children are much more susceptible to infection than adults. The disease is not hereditary and the

(1) Leprosy is a common disease in India; probably the total number of lepers is more than a million, but this figure includes a large number of mild cases which formerly would not have been recognized.

children of lepers, if separated from their parents at birth, run very little risk of contracting the disease. The problem of controlling leprosy is on all fours with that of controlling tuberculosis; it depends on the isolation of infectious persons, the adoption of hygienic habits, and the improvement in economic standards of living.

These are the main diseases of the environment and of insanitary conditions of Egypt. Nearly all of these are curable, or, what is more important, preventable more or less. Nevertheless, the lack of comprehensive and organized medical services in Egypt carried on by an inadequate number of competent and qualified doctors makes these diseases very formidable. It was estimated that there is only one qualified medical man for 5000 of the population on an average.⁽¹⁾ In the cities they are on the ratio of 1:1100, but in the villages 1:13000; and it must be remembered that 90 per cent of the people are in need of treatment. (There are 120,000 blind, 14,500,000 with eye diseases, 40,000,000 with worm diseases, not to mention all the other varieties of disease that afflict an average nation). From an industrial

(1) "L'Egypte Contemporaine" No. 185, p. 465.

point of view Egypt is fortunate in being overwhelmingly agricultural, for physical disability and inefficiency do not appear so strikingly among those labouring in the fields as they would under a machine economy.

The situation of Egyptian morbidity has become so bad that the army finds only 4 per cent of the recruits drafted healthy enough to be enrolled without medical treatment, while 80 per cent are rejected absolutely as unfit⁽¹⁾. It should be pointed out in fairness that some slight improvement appears in certain directions in that the Public Health's efforts through hospitals for the mass treatment of eye diseases and bilharzia and hookworm, seem to have resulted in some amelioration of the worst cases, as the number of blind has been reduced and also the number of deaths from the worm diseases; but the total numbers infected seem to maintain about the same ratio to the whole population.

In this connection we should note that as numbers increase the task of overtaking the problem of illness is going to be increasingly difficult, for not only do we have to consider physicians and cures, but also very expensive readjustments in national life for the prevention of further infection.

(1) Ibid page 465.

The Expectation of Life.

Our high deathrate, infant mortality rate and the high rate of morbidity are inescapably associated with a short expectation of life. In 1936 De El Shanawany constructed a life table based on census enumerations of 1917-1927. In 1944 Professor Clyde V. Kiser⁽¹⁾ had also constructed another life table for Egypt based on 1927-37 Census. No big differences could be noticed between the two census as is shown in Table 33

Age	El Shamawany		Clyde V. Kiser.	
	<u>1917-27</u>		<u>1927-37</u>	
	Males	Females	Males	Females.
0	-	-	30.2	31.5
5	-	-	41.5	41.0
10	38.06	41.64	38.2	37.2
20	32.92	35.77	33.5	32.8
30	27.80	30.04	28.6	28.3
40	22.82	24.53	23.7	23.7
50	18.07	19.36	18.8	19.6
60	13.65	14.58	14.2	15.4
70	9.63	10.27	9.9	11.4
80	6.05	6.45	6.2	7.6
90	2.93	3.13	4.3	4.3

Table 33 : Expectation of life at given
ages in Egypt.

(1) The Demographic Position of Egypt - Clyde v. Kiser, p. 116 of the "Demographic studies of selected areas of rapid growth" Millbank Memorial Fund, New York, 1944.

Two generalizations may be drawn from the data on the expectations of life presented in the above table. First is the greater longevity of females than of males. At birth the average life expectancy in Egypt is greater for females than for males. The girl baby starts life with a life expectancy of approximately one year greater than her brother and this advantage is normally maintained throughout life.⁽¹⁾

The second generalization is that there is not a noticeable difference between the two estimates of Dr. Shanawany and Dr. Kiser. The comparisons fail to indicate that life expectancy was higher in 1927-37 than in the preceding decade. That means that there are no improvements in the general standard of public health because there is a definite relation between the incidence of mortality and the incidence of morbidity. The lowering of the deathrate is associated with a decrease in morbidity rate; in other words the lower the deathrate in a country, the larger will be the life expectancy of the average individual in this country.⁽²⁾

Perhaps the best way to show that the Egyptian

(1) On the basis of Dr. Kiser's estimation the females in Egypt have a slight advantage over males in survivorship. Among males only 78 per cent reach one year of age, 64 per cent reach five, 53 per cent reach 20 years of age and 21 per cent reach sixty.

(2) "Measurement of Public Health" by Crew.

expectation of life is short is by comparing the Egyptian figures with those of other countries, as is shown in table 34 and fig. 13

Country.	Years.	Sex	Expectation of life.
Canada	1940-42	M	66.1
		F	68.7
New Zealand	1934-38	M-F	65.5 - 68.5
Netherlands	1931-40	M.F.	65.7 - 67.2
Sweden	1936-40	M.F.	64.3 - 66.9
Australia	1932-34	M.F.	63.0 - 67.1
U.S.A.	1939-41	M.F.	62.8 - 67.3
Switzerland	1933-37	M.F.	60.7 - 64.6
England & Wales	1937	M.F.	60.2 - 64.4
Scotland	1930-32	M.F.	56.0 - 59.5
France	1928-33	M.F.	54.3 - 59.0
Greece	1928	M.F.	49.1 - 50.9
Japan	1935-36	M.F.	46.9 - 49.6
Russia (Europe)	1926-29	M.F.	41.9 - 46.8
Brazil (Federal districts)	1939-41	M.F.	40.8 - 46.3
Egypt	1917-27	M.F.	31.0 - 36.0
India	1931	M.F.	26.9 - 26.6

* Table 34 : Expectation of life in selected countries.

* Sources: Statistical Yearbook of the L.O.N. 42-44
Table 15 - Geneva, 1945; Population Analysis by
L. Smith, p. 252.

EXPECTATION OF LIFE IN SELECTED COUNTRIES

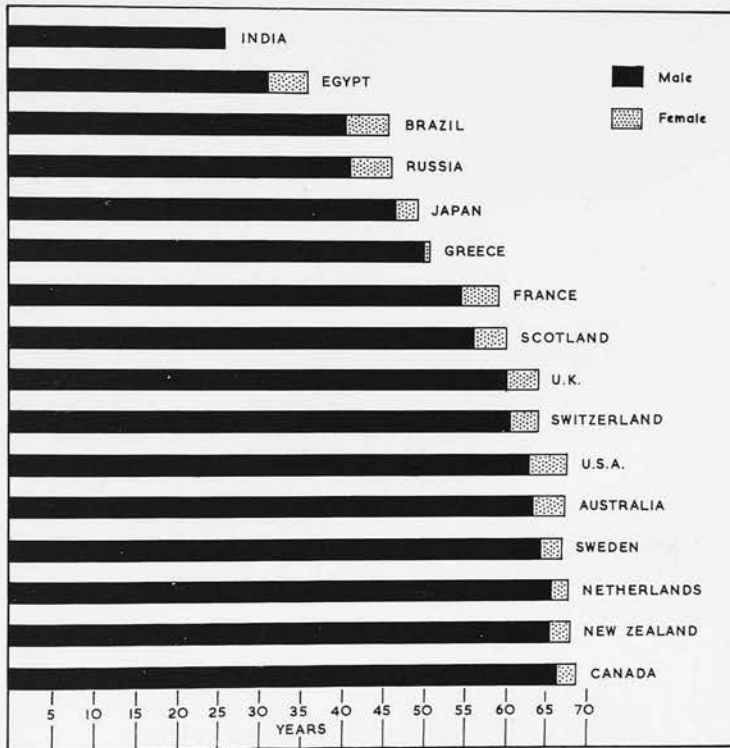


Fig. 13.

The difference between countries in expectation of life at birth are still very considerable and are of interest as probably the best simple index of economic conditions or levels of living prevailing in different lands.

Thus in Canada, where the standard of living is high the expectation of life for males at age zero is 66 years, whereas it is 31 years in Egypt and 27 years in India. These differences are about what one would expect from a study of the environmental conditions of these different countries, for the expectation of life at birth is very largely a function of the general environment and social conditions in which children get their start.

It is, therefore, safely argued that if Egypt controls her environment effectually, then there can be added years to the expectation of life of her people. Such an increase will be of great social and economic significance to the nation in the following ways.

(1) Increased length of life will permit an increasing number of individuals to acquire a rich background of experience and mature judgement from which Egypt will undoubtedly profit.

(2) The saving of life in early infancy and in childhood and youth makes unnecessary the vast expenditure of human energy in reproductive activity, much of which could be released for

constructive purposes other than reproduction.

The increased activity of western women in production fields - economic, artistic and scholastic - can be attributed in part to their release from confining duties of bringing to life and caring for a large number of children.

(3) The average man, during a notable portion of his life is the main financial support of a family, and if he is removed by death the family income is in the majority of cases greatly reduced or entirely wiped out. Therefore, to his family this wage-earner represents a definite economic asset, the numerical measure of which depends, apart from his annual earning capacity also on his age. A young man of 25 for example may reasonably expect to continue to earn for many years to come and to have a family dependent on him for a considerable fraction of the time. In contrast a man of fifty cannot expect to go on very much longer earning a full wage. Evidently in pounds the younger man represents a greater asset to his family merely as a breadwinner than the older man. For this reason any increase in the working life is also an increase in the economic assets of the nation as a whole.

In conclusion we are led to argue with Dublin and Latka⁽¹⁾ that "Modern longevity is the product of

(1) Dublin and Latka "Length of life" p. 154. The Ronald Press Company 1936.

modern enlightenment. Man himself, as a physical and physiological unit has probably changed but little since remote antiquity. But man's power over his environment has changed immensely."

CHAPTER 6.

THE FUTURE of BIRTHS and DEATHS.

The future death rate - the likely future of birth rate.

The future of births and deaths.

The general impression that the preceding chapters of our study have left in the mind is depressing - a high birth rate matched by a high death rate, and a big proportion of those who are born dying so young that the mean after life - time at birth is approximately half the corresponding Western European figure.

We may turn from this melancholy picture to the unborn future and try to follow the trend of population for the next two decades; making the assumption that there is no net migration we shall seek to find out how the population might develop under the influence of fertility and mortality alone.

First let us ask ourselves if our demographic position will turn out better than in the past - i.e. can Egypt in the near future pass from the second phase of the demographic cycle into the third, which is marked by declining birth-rates and death-rates.⁽¹⁾ The answer to this question will depend upon a variety of things that we may do, and that may happen to us. It should however, be evident by now that one of the main factors that

(1) See "Stages in population growth" by Blacker in the Eugenics Review, October 1947.

will determine the nature of the answer will be the favourable or unfavourable response of the Egyptian authorities to a population policy such as will be attempted in the second part of this study. Nevertheless, it is usual to depend upon mere guesses in seeking whether our birth and death rates will decline in the two coming decades. But even in ignorance of this factor we may speculate tentatively, and within very broad limits, making use of the past trends and resting on certain assumptions which appear reasonable in the light of the known facts, bearing in mind that there is nothing precise because our knowledge of the forces underlying changes in mortality, fertility and marriage is incomplete, and the precise effects of suspected causes cannot at present be ascertained. Even if our understanding of the past was more complete, the future would inevitably be uncertain.

It is not and may never be possible therefore, to predict the course of these elements in the future with any great confidence. That is why any word such as "estimate" or "forecast" should be used in this connection with due caution. However, as knowledge accumulates regarding the factors affecting the death and birth rates, we are justified in making more accurate forecasts in order to trace the possible direction of threads all of which may of course be diverted by unforeseeable developments.

The future death-rate:

It is known that most of the great improvements in mortality in Western countries during past decades has resulted from the advance of knowledge in the fields of medicine, nutrition, bacteriology and sanitation; and from improvements in the organization of communities to utilize the best knowledge available. Scientists now know how the community can organize to prevent the worse ravages of the epidemic disease of tuberculosis and of the deadly ailments of infancy and early childhood.

It would seem reasonable, therefore, to expect that declines in the death rates of the countries that still have high death rates such as Egypt - would be even more rapid in the future than those of Europe in the past. The decline in death rate in Japan for instance in the last 30 or 40 years and in the Soviet Union in the last 15 to 20 years may be considered typical of what will happen in Egypt when it, too, tackles its health problem in earnest and begins to reap the benefits of a more productive economy. It is true however, that considerable progress has been made in our country, in the control of epidemic disease in spite of the fact that not a great deal of progress has been made in raising the general economic level, and for this reason the control of the death rate is still

as precarious as it was in Europe in 1800-1850. Nevertheless with our present accumulation of health knowledge we may rather confidently look forward to a time not far distant when "high" death rate will be a thing of the past; if we have the good sense to make a rational, extensive and continuous control over our environment. Probably the two important factors behind our death rate are malnutrition and dirt,⁽¹⁾ both of which originate in our environment so that our death rate will fall if we control and improve this environment.

In the first place, any increase of income per head will bring about a decline of mortality, because a higher income will enable the people to improve their diet and resist disease more effectually than at present. Secondly, almost all serious and devastating diseases can be controlled and even eradicated by means within our reach.⁽²⁾ Thirdly, even if income per head does not rise but the aggregate income of the whole country increases, large sums are likely to be

(1) Dirt is a product of private ignorance and public inefficiency. We live in overcrowded places, we eat, we drink and inhale infection in every conceivable way, and though we may have developed a certain degree of immunity we contract and succumb to infectious diseases in large numbers.

(2) Several countries have completely eliminated small-pox by compulsory vaccination. Similarly the incidence of tuberculosis and disease of the respiratory organs can be greatly reduced by proper nutrition and proper habits of personal hygiene.

spent in future on ameliorating general living conditions. Sound health and long life are ends in themselves, and once we become sufficiently conscious of their importance, we shall employ a good part of our national income to attain them. We should also add to the effect of measures for health, the influence of increasing education and the appreciation of our people of the need to adjust our mode of life to the requirements of health and efficiency. It is also true that there is a special factor to which the expectant change of trend will be partly attributed, namely the recent advances in medical knowledge associated with the use of sulphonamides and penicillin.⁽¹⁾ Moreover, there are other factors which may tend in future to accelerate the fall in death rates at low ages. Among these are the attention now being paid to the welfare of children and the recent increase in the amount of medical attention devoted to the diseases of children.

The likely future of birth rate:

If for the sake of argument, we assume the fall

(1) The effect of these two improvements in reducing mortality at high ages has undoubtedly been important in western countries in recent years.

in mortality tentatively forecast in the preceding paragraphs as in course of fulfilment it seems evident that, all other things being equal, the birth rate will tend to rise. In the first place the children will share in the improved mortality rate and will in themselves attain in fertility. Secondly, more women will survive the perils of childbirth and live to bear more children. Thirdly the improved condition of women in the fertility period will stimulate their childbearing propensities.

It is thus our task to examine whether other factors attendant on the improved mortality rate can (a) neutralise the influence just outlined, or (b) operate yet further so as to effect a net decline in the birth rate.

First on the list of corrective factors is free education, introduced and carried through last year by Dr. Taha Hussien Pasha, Minister of Education. This great benefit described by its promoter as the right and duty of every citizen is a demographic factor of the first importance especially in a country where illiteracy prevails in 76.6% of the population. Inevitably it must awaken the female population to a marriage in which their main duty will not be the bearing of children, and in which they will have an equal voice with their husbands in determining the size of the family. Similarly,

the male population will be made aware of the ways and means towards a higher standard of living. Secondly, the far-reaching plans of the Ministry of Social affairs for raising the standard of living supported by parliament and strongly encouraged by eminent well wishers in Great Britain and America will reduce the gap between rich and poor and thus induce a desire for smaller families.⁽¹⁾

Taking the above two sets of factors together the present writer believes that the net result, in the next two decades, must be a slight progressive fall in the birth rate from its present height as shown in diagram 14.

The process of urbanisation which has been speeded up during the past decade could also be a satisfactory tendency from social and economic standpoints, since urban conditions tend to better wages, higher living standards and a reduction in the size of families.

The question of the size of the future population may now be considered. Forecasts can be made but they are generally unreliable, being based upon conditions and trends which are often too definite and too rigid to be sustained by unpredictable

(1) The relation between standard of living and birth rate will be dealt with in subsequent chapters.

humanity. Malthus himself says, "No estimates of future population or depopulation, formed from any existing rate of increase or decrease can be depended upon."⁽¹⁾ The independent forecasts of a statistician, a demographer, and an economist during the past 15 years support this dictum. Azmi, in 1933 on mathematical grounds considered that by 1947 the population should reach 17.2 million⁽²⁾, while Cleland in 1936 suggested that the population would attain 18.7 millions by 1957.⁽³⁾ Issawi in 1943 basing his calculations on an expected growth of 1% per annum, states "The population will reach the twenty million mark within the next fifteen to twenty years."⁽⁴⁾

It will be seen that all three writers' prognostications have fallen short of the mark, mainly owing to unforeseen circumstances related to social and economic upheavals of the past ten years. It is difficult to foretell Egypt's population in the future - the very fact that overpopulation is recognised will gradually be reflected in the rate of increase which should - and must - eventually show diminution.

(1) T.R. Malthus "Essay on the principle of population" Ch. XIII.

(2) H.Azmi - "A statistical study of the population of Egypt" L'Egypte Contemporaine, Vol. XXIV, 1933. p. 649.

(3) Cleland. "The population problem in Egypt" p. 34.

(4) Issawi - "Egypt" p. 47.

BIRTH, DEATH AND INFANTILE MORTALITY RATES IN EGYPT BETWEEN 1906 & 1945 AND PROBABLE RATES BETWEEN 1945 & 1970

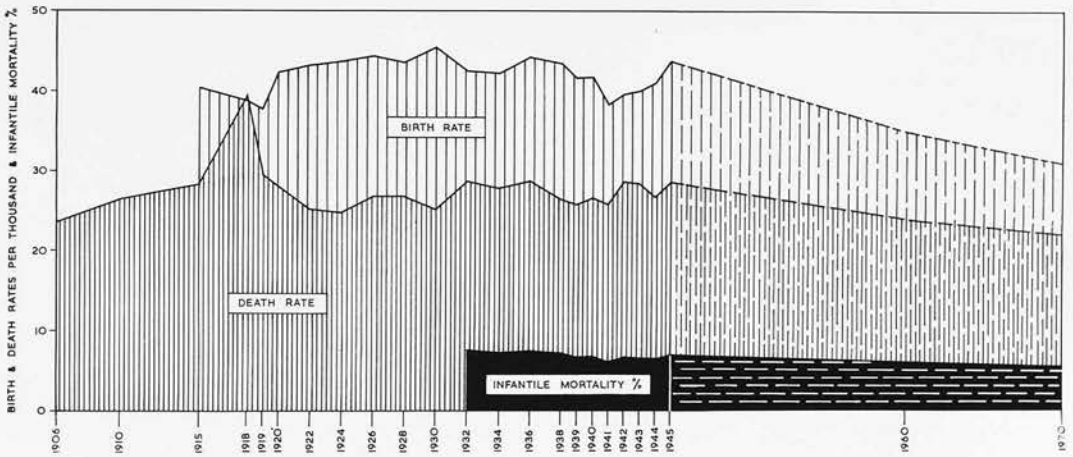


Fig. 14.

CHAPTER 7.

SYMPTOMS of OVERPOPULATION.

population density - redundant agrarian population -
small size of agricultural holdings - the high prices
of land - diminishing returns in agriculture - high
proportion of arable area under cereals or other
food crops - Undernutrition.

(1) Dr. Hugh Hodge, M.P., *The History of Population in England* Vol. VIII 1907 p. 22.

(2) 1925 p. 22.

(3) *Parliamentary Papers* 1907 "Proceedings of the Royal Commission on the Poor Law" p. 78.

(4) *Parliamentary Papers* 1907 "Proceedings of the Royal Commission on the Poor Law" p. 78.

(5) W. L. Thompson, "The Demography of the British Empire" p. 10.

(6) *Parliamentary Papers* 1907 "Proceedings of the Royal Commission on the Poor Law" p. 78.

It has been shown in previous chapters that the population increased between 1886 and 1947 from 8,045,000 to 19,087,857; that both birth-rate and death rate are abnormally high and that the average duration of life is only 31 years. These are, however, only prima facie evidence of the condition now to be dealt with. What may be regarded as reliable tests of overpopulation are "hard to come by" but when dealing with countries overwhelmingly agricultural - such as Egypt, we may hope to detect some maladjustment in the economic life which may be symptomatic of overpopulation but no definite conclusion could be drawn. As Dr. H. Dalton rightly observed, "... the theory of population viewed as a part of general economic theory, is still in a very unsatisfactory condition. As commonly expounded, it is still full of gaps and ambiguities, and often of sheer errors, and even when it looks its best it still looks intellectually undity."⁽¹⁾

We have no lack of theories on population in general from such authorities as Dr. Dalton,⁽²⁾ H.P. Fairchild,⁽³⁾ Carr Saunders,⁽⁴⁾ Warren S. Thompson,⁽⁵⁾

(1) Dr. Hugh Dalton, M.P. "The Theory of Population" *Economica* Vol. VIII 1925 p. 23.

(2) *ibid* p. 23.

(3) Fairchild "Optimum population" "Proceedings of the World Pop. Conference of 1927" page 72.

(4) Carr Saunders "World Population" Chapter XI.

(5) W.S. Thompson. "The demographic and economic implications of larger immigration" *Millbank Mem. Fed.* Vol. XXV 1947 pp. 184-8

Alfred Sauvy⁽¹⁾, M. Gottlieb⁽²⁾, and others⁽³⁾; these authorities, however, deal with population on an optimum basis, which if applied to Egypt in her present condition would be merely "the council of perfection." As theories of optimum population cannot be considered applicable to Egypt since they fail to take note of such symptoms as high density of population per unit of arable land, preponderance of small farms, redundant labour per unit of land, malnutrition etc. Where all or most of these symptoms are detected in the social and economic structure of a given country overpopulation can be safely inferred. This was the conclusion drawn at the L.O.N.'s conference on rural populations of Eastern and South Eastern Europe in 1939.⁽⁴⁾

We shall now examine in turn each of these symptoms in relation to Egypt.

1. Population density.

a. Geographical density. We must distinguish between geographical density of population and the

(1) Alfred Sauvy "Richesse et population" 2nd ed. Paris 1944 - ch. a.

(2) M. Gottlieb "The theory of an optimum population for a closed economy" J. Polit. Econ. vol. III 1945 pp. 289-316.

(3) For a review of the literature about it see "Population Index" years 1948-49-50 Office of population research. Princeton Univ; and Pop. Association of America. Inc.

(4) L.E.N. European Conference on rural life 1939. Technical Documentation No. 1 - page 48.

economic density. The former is the simple relation between total population and area. The latter, on the other hand, depends upon the resources of the country in relation to the total population and their standard of living. An increase in the population or a rise in the standard of living without a corresponding increase in national wealth, would lead to a higher economic density, or to what is commonly described as "overpopulation."⁽¹⁾

The geographical density - i.e. the relation between total population and area - is always misleading in connection with overpopulation. The physical area of Egypt, for instance is approximately 1,000,000 square kms.; of this huge area only 34% is inhabited, the remaining portion being desert land and unpopulated except for a scanty number of Bedouins.⁽²⁾ - Fig. shows the density in details.

The following table shows the high density of population in Egypt - when compared with other countries.

(1) The overpopulation occurs when the population cannot be maintained on the country's resources.

(2) The census of 1947 reported their total number at 491320.

Country.	Density per sq. Kms.	Country	Density per sq. Kms.	Country	Density per sq. Kms.
Egypt.	20 - including deserts. 550.7 inhabited.	China.	47.6	Germany	188.9
		India	...	Italy	150.
		Japan	210	Nether- lands.	285.4
		<u>Europe.</u>		Switzer- land	110.1
<u>America</u>					
Canada	1.3	Belgium	276	U.K.	230.
U.S.A.	18.4	Checks.	95.2		
<u>Asia.</u>					
Ceylon.	104.9				

Table 35 : Densities of population in
selected countries.

Thus if we depend upon the geographical density of population - we find that Egypt had two different densities; 20 and 550 per square Kms. The former density does not give any accurate picture of our density because it includes the vast desert areas of both the Eastern and the Western deserts. It is therefore argued that if we must depend upon the geographical density in comparing the densities of population in different countries, then we must exclude the deserts which are at present uninhabitable. Hence, Egypt's density of population must be 550 per square kms. one of the highest densities of the world. We must bear in

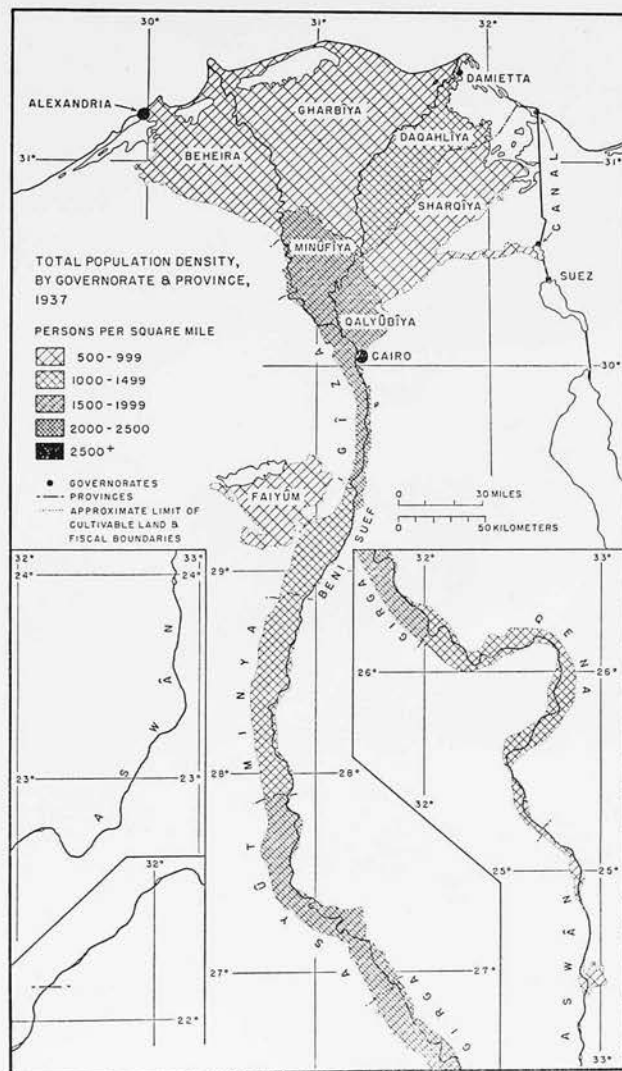


Fig. 15.

mind that this density, which has increased during recent decades, is not the result of very intensive industrial activity fostered by rich natural resources and mining deposits such as favour a high density in the strongly industrialized mining areas of Europe and the U.S.A.; on the contrary, this increase has been going on without any corresponding expansion of the living space and thus led to an exceedingly low standard of living and a reduction of the per capita share of the population in the boons which the fertile land of Egypt provides; a state of affairs which was rightly forecast by Malthus early in the nineteenth century.

b. Economic density: The figures indicating the geographical area, should be supplemented by an indication of the economic value of that area. In this way, by taking the ratio of population to a unit of area, it will be possible to draw more practical conclusions. Yet even if comparisons are made, not between areas of cultivable land, but between the extent of cultivated land in the various countries, the resulting figures unaccompanied by any detailed commentary might give a false idea of the demographic and agricultural situation of the countries concerned.⁽¹⁾ Thus, it is argued that the relation between the crop

(1) *ibid* p. 173.

area and the total population, on the one hand - and between the total production and the total population on the other hand are evidence of overpopulation in a country.

Applying this assumption to Egypt, we find that the total population increased from about 2,500,000 in 1813 to more than 19 million in 1947, a rate of growth probably unparralled in any purely agricultural country, and out of all proportion to concurrent increase in cultivated area and crop area, as shown in the following table and chart.

Year	Population		Cultivated Area			Crop Area.		
	Number.	Rate of Growth	Area per feddan.	Rate of Growth	Area per 1000 persons	Area per feddan.	Rate of increase	Area per 1000 persons
1813	2,500,000	100	3,054,710	100	122.2	3,665,652	100	146.6
1877	5,500,000	220	4,742,610	155	86.2	4,762,178	130	86.6
1897	9,714,000	989	5,087,887	166.5	52.4	6,848,396	187	70.5
1907	11,287,000	452	5,402,716	177	47.9	7,162,317	209	67.9
1917	12,751,000	510	5,319,148	174	41.7	7,686,189	210	60.3
1927	14,218,000	569	5,544,361	181.5	39.0	8,661,250	237	60.9
1937	15,952,000	639	5,288,622	173	33.2	8,307,748	227	52.1

Table 36 : Population, cultivated and crop area.

As to the increase in production, perhaps the following table will illustrate the unsatisfactory situation.

THE RELATION BETWEEN POPULATION GROWTH AND CROP AREA
BETWEEN 1886 & 1947

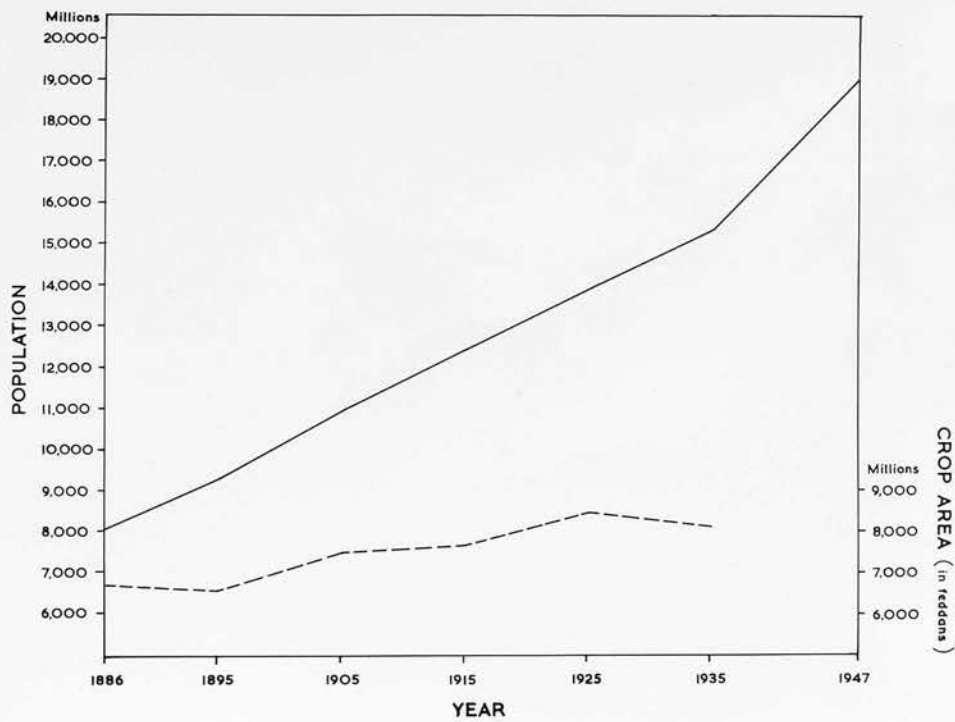


Fig. 16.

Year	Cotton	Wheat	Rice	Sugar Cane	Maize.
1921	2,720	10,070	3,600	-	17,000
1923	3,020	11,060	2,300	-	17,000
1925	3,270	9,840	1,800	16,000	19,500
1927	3,440	12,070	5,400	14,700	20,600
1929	3,640	12,390	4,200	17,500	-
1931	3,730	12,540	4,500	21,300	19,800
1933	2,230	10,870	5,400	23,100	14,700
1935	3,400	11,760	7,100	20,900	16,900
1937	4,130	12,350	3,800	23,900	16,500
1939	3,750	13,350	9,000	24,700	15,200

Table 37 : Increase productions (principle crops).

It seems clear therefore, that the growing population is pressing harder and harder on the means of subsistence and for this reason the Malthusian spectre is thus pointing an accusing finger at the social and economic conditions of Egypt.

2. Redundant agrarian population.

We have too many people engaged in agriculture (see Fig. 5), because there is not sufficient land to keep them occupied more than one half of their working time. Cleland believes that even under present working conditions the work could be done better if one half of the labour were withdrawn and the remaining

half were given intelligent supervision, or else taught to manage their cultivation more economically. This, according to Cleland would mean that some 5,000,000 people ought to be given some other means of living.⁽¹⁾ Again, R. Rodin in his brilliant article on "Problems of industrialization of Eastern and South Eastern Europe" estimated that the agrarian excess population amounts to 20-25% of the total population.⁽²⁾ Applying the ratio he gave for Eastern Europe to Egypt, we should reach the almost equally startling conclusion that, out of the 19 million inhabitants, four million should be transferred to another occupation other than agriculture within the next decade or two.

Nevertheless, this estimate of agrarian surplus population seems exaggerated when the special circumstances of Egypt are taken into consideration. In the first place, the optimum number of workers per acre is higher in Egypt because agriculture depends almost entirely on irrigation and extension of perennial irrigation enables the cultivation of the same plot twice or three times annually. Secondly, cotton which occupies 25% of the crop area

(1) Cleland (W) The Population problem in Egypt p. 106.

(2) R. Rodin "Industrialization of Eastern and South Eastern Europe" - Economic Journal - Sept. 1943.

in normal years, is a very exacting crop in respect of the labour required for cultivation and subsequent processing. In 1933, the Egyptian Ministry of Finance estimated that an acre of cotton needed 41 man-days and 65.5 boy-days, while wheat, barley, beans, lentil and bersim required between eleven and fifteen man-days and between one and three boy-days. Thirdly, the soil is highly fertile and the yield of cotton per acre is more than double the world average.

These factors, however, must be borne in mind when evaluating Cleland's estimate or applying R. Rodin's figures to the Egyptian surplus agrarian problem.⁽¹⁾

3. Small size of agricultural holdings.

The League of Nations' European Conference on rural life in 1939 pointed to small sized agricultural holdings as a symptom of overpopulation - "...a common feature of regions in which there is "pressure on available agricultural land is the great

(1) As a result of the permanent surplus agrarian population there is a constant flow of "fellaheen" from the villages to the cities, where they mostly join the army of unemployed. Various Egyptian journals have recently been concerning themselves with the increase of beggars in some of the big cities and calling upon the authorities to provide a solution.

"reduction in the size of the typical holdings by
 "successive subdivision, resulting in the so-called
 "dwarf holdings." (1)

The conditions of land tenure in Egypt are exactly those signalized by the L.O.N. Conference as symptomatic of overpopulation, as the following table shows.

Proprietors	Nos. of Proprietors.
Up to 1 feddan	1,765,702
1 to 5 "	570,449
5 to 10 "	85,622
10 to 20 "	41,455
20 to 30 "	11,907
30 to 50 "	9,179
over 50 "	12,232
Total.	2,496,546

Table 38 : Distribution of Landownerships
 1940 (Landless labourers,
 1,500,000 estimated)

Not only does the small sized agricultural holdings prevail in Egypt, but the dwindling process

(1) L.O.N. European Conference on rural life 1932.
 Document No. 1 page 49.

has continued uninterrupted for many decades and is still active. This constitutes a particularly characteristic feature of Egyptian agriculture. The following table may serve to illustrate this point.

Land owned according to size Groups (In feddans)	Number of Proprietors.					
	1896	1906	1916	1926	1936	1939
Up to 1	-	-	1,006,866	1,391,533	1,677,536	1,751,587
1 - 5	611,074	1,084,001	473,688	531,324	564,700	571,133
5 -10	80,810	76,935	76,641	81,597	84,517	84,609
10-20	41,276	36,951	36,982	39,027	39,643	40,494
20-25	22,225	20,029	19,852	21,638	21,799	21,179
Over 50	11,875	12,665	12,297	12,465	12,420	12,248
Total	767,260	1,230,581	1,626,326	2,077,584	2,400,715	2,481,250

Table 39 : Distribution of Land-Ownership in Egypt (1896-1939)

A probable explanation can be found in the islamic laws of inheritance, under which land does not pass to the eldest son, but is divided among all the children, generally in the ratio of two to one as between male and female.⁽¹⁾

(1) This provision holds good in the frequent case of a father leaving no will.

As a result of the small size of our agricultural holdings a disproportion exists between labour and other factors of production. The average farmer has not enough land to occupy him and his family fully and he is obliged by his poverty and small acreage of his farm to use the simplest implements and the smallest quantity of capital. In order to increase output, therefore, his farm must be reconstructed, enlarged and provided with sufficient capital. But obviously a growing population militates against this reform.⁽¹⁾

4. The high prices of land.

The great demand for land from people most of whom have no alternative source of income, has driven up the prices of farm land out of proportion to its income-earning capacity. In Egypt, the value of land is high, because the masses of the people must have some land if they are to subsist at all. The high price is thus an index of population pressure rather than of agricultural prosperity. This is extremely unfortunate, for the high prices of land absorb a good proportion of the farmer's capital resources leaving him a residue that is

(1) One evil arising out of population pressure and restricted space is the system of rent sometimes obtaining between landlord and tenant in the remote districts of Upper Egypt.

hardly sufficient for its improvement or efficient operation. Hence he relies as much as possible on human labour and poor cattle that cost him little to maintain, uses the simplest and cheapest implements, draws as much as he can on the natural fertility of the soil and secures from his enterprise a yield that keeps him and his land on the margins of subsistence.

5. Diminishing returns in agriculture.

Increasing application of labour and capital to a given area will initially cause greater increases of production. But, after a certain point further application of labour and capital will increase the total amount of produce, but the increase per head will become less and less, for the productivity of any unit of soil is not indefinite.

Thus if we can ascertain whether in Egypt more effort has to be put into a given area of land to-day to produce a given amount of food than was required in the past, we shall discover whether Egypt has reached a state of overpopulation. In other words effort is the common dominator here, applied as human or animal labour in conjunction with the amount of seed sown, cost of implements, amount of fertiliser used, and irrigation requirements. Again clear cut data are not to be found, but we may reach tentative conclusions by remembering that in the

production of crops in Egypt labour, fertiliser and water are the principal items of cost. The amount of irrigation water is strictly controlled and varies least of these three items; we are left with labour and fertilizer.

Precise knowledge regarding labour is not available, but we certainly know that there were more agricultural workers in rural areas in 1947 than in previous years, for as we have seen the increase in population has been far greater than the increase in cultivable land, and the majority of this increase is in rural areas.

Fertilizers have become an essential to Egyptian agriculture and imports have increased steadily - suggestive of decreasing soil fertility and intensive cropping of the soil. Crops have responded to this stimulus, but yields have not increased in proportion to the increase in fertilizer, and of recent years yields of many of the main crops have tended to fall. The remarkable increase in fertilizer imports is shown in table Egypt now leads the world in consumption of nitrogenous fertilizer and could use much more - the theoretical figure 800,000 tons per annum was proposed a few years ago.(1)

(1) J. Anhoury: "Les engrais chimiques et leur rôles dans l'Economie de l'Egypte". L'Egypte Contemporaine Vol. XXIII 1942 - pp. 29-47.

Year	Tons	Year	Tons	Year	Tons
1912	70089	1927	225430	1934	422399
1913	71654	1928	275370	1935	561654
1914	72610	1929	327863	1936	572438
				1937	641838
				1938	513799
				Subsequent figures influenced by war-time shipping shortages.	

Table 40: Imports of fertilizers into Egypt.

From these general trends it would seem that more labour and more fertilizer is now in use and that the increase in the volume of production is not commensurate with the population increase - a state of affairs which may suggest that the country has reached a condition of overpopulation.

6. High proportion of arable area under cereals or other food crops.

It is sometimes stated that one of the symptoms of agricultural overpopulation is a high percentage of food crops, or a high percentage of cereal crops in the total arable area.⁽¹⁾ The following table of the

(1) The interpretation of this phenomenon as a sign of agricultural overpopulation however, is though plausible, open to doubt. In the first place the disproportionate utilization of the arable land for cereals is in Egypt favoured by the climate. Reasons of national agricultural policy may also dictate a high proportion of arable area under cereals (For an elaborate discussion on this point see document no.1 page 51 of the L.O.N. European Conference on rural life 1939.)

percentage of crop plantation in Egypt is evidence of the high proportions of cereal crop or food crops in general.

Crops	per cent in year	Crop.	per cent in year.
Cotton	13.5	Sugar-Cane	1
Maize	24.7	Barseem (for animals)	22
Rice	7.1	Gardens and fruit trees.	6.1
Wheat	17.1		
Lentils	.9		
Beans.	4.3		

Table 41: Percentage of crop plantation (1945)

The predominatiary cereal crop in agricultural production could be illustrated in two factors. In the first place Egyptian agriculture has to meet an insistent demand for food from a vast population. Secondly it has to supply a variety of raw materials for industrial cotton manufacture at home. The former demand is governed chiefly by internal conditions of which the size of our population and the level of its income are the most important. We have for some years past ceased to export food on an appreciable scale; indeed we occasionally supplement our domestic production by imports from abroad. We are thus almost self-sufficient in respect of our food supply, and Egyptian agriculture carries wholly

the responsibility of feeding our large population. But though the number of mouths to be fed in Egypt is steadily increasing, income per person is low and poor people can spend only small sums even on the purchase of the food that is necessary to life. It is this fact which gives the farmer the opportunities to which he has in recent times adjusted his farming. He concentrates his limited resources on producing the cheapest varieties of food, those which require the minimum of land and other resources per unit of output.

7. Undernutrition.

Whether or not the phenomena discussed in the previous section of this chapter - the small size of agricultural holdings, the high proportion of cereal crops to total cultivated area, etc., are indicative of overpopulation, they are of the greatest significance in that they all lead to what is ultimately the essence of unsatisfactory regional conditions, viz., undernutrition, which when chronic, may itself be taken as one of the most important indices of overpopulation.

In Egypt, there is no comprehensive survey of this very important problem. But a number of sample surveys in different parts of the country enable us to construct a picture which is correct in broad outline. In the first place there is an absolute shortage of food in Egypt, a deficiency of calories

necessary to mere existence. As Professor W. Cleland has demonstrated "The nutrition value of the peasant's food is below his minimum needs, being deficient in both calories and balance. The chief item is bread made of ground maize which when baked resembles sheets of cardboard."⁽¹⁾

Similarly Dr. William H. Wilson, a former professor of physiology in the Faculty of Medicine - Fouad the 1st University, Cairo - calculated the absolute minimum dietetic elements necessary for a labouring Egyptian family composed of five members. These calculations show clearly the inadequacy of food for even the minimum needs.⁽²⁾

More recently E.B. Worthington in his report to the Director General of the Middle East supply centre in August 1945, writes "The whole Middle East area with the exception of the Jews in Palestine "is included by Bennet (1941) in the groups of "population which derive at least 70 per cent of the "energy of their diet from cereals and roots. A considerable part of the population probably belongs to the group so deriving 80 per cent or more of its calories. That is to say, the area is included among the worst nourished parts of the world. It is possible to make certain broad statements which

(1) W. Cleland "The Population Problem in Egypt", Science Printing Company U.S.A. 1936 page 75.

(2) Ibid page 76.

are true of populations in general which fall into this category. Malnutrition is widespread and starvation threatens the poorest. Deficiency diseases are frequent, but their particular manifestations vary from one area to another according to details of food habits, and the picture is complicated by infectious diseases.⁽¹⁾

It is well to remember however, that the above conclusions are not fool-proof; they are all based on approximations. These are not meant to give an exact picture of the situation but only its general outline. Yet they are not very far from representing the truth. As you who are acquainted with Egyptian country life - and the author has spent long enough time in many villages to entitle him to speak from experience, would maintain that the Egyptian fellah is virtually starving, and the overcrowding there is one of the most potent causes of his plight.

The facts assembled in this and the foregoing chapters are beyond dispute; the high birth and death rates, the appalling infant mortality, the spectacular increase in the population during this half century and the unfavourable symptoms just

(1) E.B. Worthington "Middle East Science" A survey of subjects other than agriculture. London H.M.S.O. 1946 page 159.

examined in this chapter - all these are attested realities in the life of Egypt to-day. It is on these known facts that the present writer basis his conviction that Egypt is a prey to overpopulation.⁽¹⁾ If this view is accepted our first task is ended; for we have found the parent malady in the body-politic of Egypt. It remains to discover the various remedies that can be prescribed in order to eradicate this basic cause of evil, and to co-ordinate them into a coherent and workable population policy. This will form the subject matter of Part II of this thesis.

(1) It is not proposed to examine the article published by M. Nassif in the French population magazine of 2 Sept. 1950. "L'Egypte est-elle surpeuplee?" in which the writer has endeavoured to show that Egypt is underpopulated!! The unscientific presentation of data, the suppression and distortion of essential facts prove that the author is biased and that the paper is designed to serve sectional interests rather than the general welfare.

*Egypte
contem-
poraine*

A Population Policy for Egypt.

The first part of this thesis had described Egypt's population problem; the increasing of the population, the birth and death rate, the momentous results of this increase and the social and economic background of the pressure of the population.

It is now our task to discuss a population policy which will help towards the solution of the population problem, in the hope of provoking some governmental action at least in the direction of further intensive study.

As one studies population trends in Egypt, one cannot fail to be struck by the "Laissez faire" philosophy that has hitherto prevailed. There has been singularly little awareness of the general increase now taking place in human population. Indeed even among highly educated persons, population problems have in general been neglected. Practically no conscious attempt has ever been directed towards governing the general trend of population growth; this has been left primarily to customary social forces in their numerous phases as they affect mating and family behaviour and consequently the birth-rate. Nor have any sustained or consistent measures ever been undertaken to combat the death rate. True the Ministry of Health has taken measures to surcombscribe epidemics and raise the general health standard; but such ad-hoc expedients cannot be regarded even as

pointing in the direction of a campaign within the framework of a population policy, to reduce the death rate.

Moreover it has become evident that a very large proportion of our population subsist on a diet inadequate for full health and vigour. Famine or near famine conditions are not occasional phenomena of a different order, they are simply an intensification of the normal lack of adjustment between supplies and numbers - between availability and need of biological resources.⁽¹⁾

We may thus come to the question "Can Egypt, under enlightened and responsible leadership be made aware of the manifold evils stemming from what may perhaps be conveniently termed 'population pressure'? Will she, under the stimulus of this awareness create an atmosphere favourable to the setting on foot of a comprehensive administrative and legislative scheme to relieve pressure and generally to bring the trends of population under effective control?

Cleland⁽²⁾ an American population authority in viewing the Egyptian scene believes that Egypt,

(1) The lack of adjustment between availability and need so far as food is concerned, was demonstrated by Orr and others in the 1930's to exist to a surprising degree, even in the then best fed countries such as the U.K. Orr showed that even so much as half the population could be shown by clinical test to have a food supply inadequate in amount, for full personal health and vigour.

(2) Cleland (Wendel) L'Egypte Contemporaine - No.185 of May 1939 - p. 461-484.

should develop rational plans that would help it avoid - to a certain extent - many of the results which may occur as a result of the continuous pressure of the population on the means of subsistence. Sir Alexander Carr-Saunders, when he visited the country in October 1950 declared in the "Masri" newspaper that by adequate foresight and planning Egypt should be able to forestall population increase now. If on the other hand she does not adopt a rational population policy - especially with regard to the standard of living - some such policy will be forced upon her by political consequences of the population trend.(1)

To the present writer the above weighty observation seems to be of vital importance to our subject. For this reason two factors already referred to in the foregoing section are here summarized, viz international factors and internal trends in culture, numbers, quality, composition etc.

International factors in population policy: It seems unlikely, in a world where there is competition for space and resources, that any nation will feel politically secure in seeing its members checked by any population policy. The fact that aggression is still a major expedient among nations has been

(1) "El Masri" newspaper of 18th November 1950.
(Arabic)

painfully brought home - especially after the recent Korean fight - as never before. Conservation of population growth in terms of national strength is likely to colour national thought so long as war and threat of war characterize the world scene. The tragedy of the recent war between the Arab states and Israel will perhaps aggravate the situation in Egypt. For this reason the present writer believes that unless the aggressive elements of mankind are brought to effective check by international devices, the Egyptian authorities will not look with favour upon a policy which would lead to a decline or stabilizing of the population even though it were clear that a good level of living could be attained only by actually reducing our population.

It is one of the ironies of life that military considerations always seem to demand a larger population and the use of force to secure the larger resources and trade to support a continuing increase, - a vicious circle from which there is no outlet as long as force is the prime factor in settling the dispute of nations. Therefore, it is argued that there can be no rational populational policy in Egypt (by "rational" I mean a policy intended to secure a high degree of social and economic welfare in peace times) as long as military needs are pressing. This is a truism because in times of peace we define "welfare" largely in terms of individual

welfare consisting of economic security, good health, leisure, good housing, etc.; but defined in terms of military security, individual welfare, must be wholly subordinated to the numbers by which safety is measured.

But these easy arguments ignore the essential human factors that a large but poverty-stricken and partly diseased population become a liability rather than an asset in times of emergency. The striking example at Egypt's door is provided by the recent Arab-Israeli war, where victory went to the smaller but materially superior population.

It is in the light of these considerations that we must judge Egypt's annual 50 million pounds on armaments which are of no construction value to the country, just because her neighbours are doing so. To be constructive these millions of pounds should be paying for economic development education, better social services, improved housing and raising the standard of living in general.

Yet until international confidence is restored, we wonder whether the Egyptian masses will ever get out of their slough of despond.

Internal population trends as a factor in population policy: Considerable attention has been given in the first part of this thesis to a discussion of the Egyptian birth-rate, its recent trends, its probable future trend etc. There was little in this

picture to indicate that the birth rate is likely to remain high without some marked alteration in social philosophy, and perhaps marked changes in social policy designed to favour the small family pattern.

Egypt is one of the few nations in the world which the large family pattern (an average of five) has come to dominate not only the practices of the masses but also their philosophy. The ethical values cherished by Islamic civilization were not thought of as constituting a population policy, but in fact they do so and have been highly effectual both in accomplishing the ends aimed at by ethical and religious leaders of the country and in securing the survival of the Egyptian people. That they have also led to the growth of the population is probably analogous to the influence of similar values on past growth of population in the West when ecclesiastical authority could effectually prohibit birth control.

These Islamic ethics which to a certain extent determine our population policy, are still operating in a very large part of the population which is now probably several times as large as it was a century ago. But the economic and social organisation of Egypt is undergoing changes which will, in the course of time, work changes in the actual habits and beliefs of the people and thus effect changes in population trends. These considerations reached an unprecedented high level after the second world war, owing to the

progressive social legislative programme which occurred during this period. If this philosophy continues to develop and bear fruit in action programmes there must come to public attention the stark realities of population problems, because no democratic nation with such a philosophy can long face the problem of having the highest mortality rate in the world without taking drastic steps to change the situation. In fact, no democratic nation can afford to have an overwhelming population of children growing up under conditions of privation and lack of adequate opportunity for proper nurture without developing extensive welfare programmes that will in effect become population policies. Moreover, the world emphasis on planning which has received fresh impetus prepares the way for a more definite formulation of a population movement based on research and motivated by a theory of conservation which will surely bring the population factor more clearly into the picture both from the standpoint of national problems and from that of national resources.

All these stimuli, seem to point to a time in the not too distant future when a population policy for Egypt will emerge.

We are thus ready to discuss in detail the population policy best suited to Egypt in the light of the evidence and theories assembled in the

foregoing chapters. But one factor remains to be cited since it is peculiar to Egypt and justifies her in approaching the problem in a sanguine spirit. She inherits a great mass of scientific knowledge based on other nations' experiences of demographic evolution over a period of many centuries. Then she is in a position which permits her to make use of the vast scientific knowledge of the western countries in solving the population problem - i.e. knowledge and its application to the practical problems of production and health. First in order of importance is the increase in production which has come to be associated with the "Industrial Revolution", beginning about the middle of the eighteenth century. Next comes the all round improvements in agriculture, due to scientific methods. Finally there is the application of science to public health and in the establishment of health services.

These are valuable assets linked as guiding threads to a population policy which shall contain a birth control policy, not as a substitute for economic and social reform but as an essential condition for such a reform.

There can be no national hope of a decent life in Egypt if birth rate is 42 per thousand a year. As a result, the death rate must be equally high to approximate equality with a high birth rate, or the

birth rate must fall to approximate equality with a low death rate. We can choose between these alternatives but we cannot support indefinitely the population arising from a high and uncontrolled birth rate and a low and controlled death rate.

For the most part, the Western World has already made its choice; the Egyptians still have to make it. There seems little doubt that in time they too will choose low death rates and low birth rates. It must be recognised however, that this choice cannot be made in a moment. The facts show that it was a century or more between the time the death rate began to fall in Great Britain and the time the birth rate began to decline. Apparently there was also much the same lag in Sweden and Finland. The lag need not be as long as that to-day in countries like India and Egypt because effective techniques of contraception are now fairly well developed and the means of communication are better. But he would indeed be a hardy optimist who would expect a rapid spread of birth control in India or Egypt, or most of other lands in Class III, within the next three or four decades. There is however, a possibility that simpler, cheaper and more effective methods for the control of contraception will be developed which will make its spread even more rapid than now seems possible. It is to be hoped that this will happen. But the economic

conditions of our people, their habits of living, their sex mores and their social values are all organized to support the present system of uncontrolled birth rates. It will take some time, even under the most favourable conditions, for most of our people to appreciate the fact that when the death rate is halved the birth rate can be halved and survival will remain just as sure as now, perhaps surer, because of less violent fluctuations in the death rate. Such changes cannot be produced by wishing for them, they will come only after the masses are made to realise the improved living conditions mean increased chance of survival.

Let us then address ourselves to a detailed study of the essential features of our population policy.

CHAPTER 8.

REDUCTION of BIRTHS.

Reasons for reducing the births - Objections to birth-control - the urgent need for popular understanding of birth-control - What can be done.

[1] "Principles of Population" - Alfred Russel Wallace, 1877, pp. 1-2.

Reduction of Births.

At the end of the nineteenth century Alfred Marshal wrote "It seems 'prima facie' advisable "that people should not bring children into the world "till they can see their way to giving them at least "as good an education both physical and mental as "they themselves had.."(1)

This principle ought to govern all Egyptian population policy to-day; for it is evident that the programme outlined in the preceding pages as regards the development of Egyptian food resources must go hand in hand with some effective measures to reduce the number of births among families who cannot assure their children an adequate standard of material and moral well-being. Yet, the limitation of numbers alone will not secure us the objectives of our future population policy, but if we can reduce the pressure of population we shall have considerably simplified the task attaining it; because we consider such reduction an important factor - supplemented of course by public health activities - in reducing the high death rate in Egypt, and improving the health and vitality of the people.

1. Reasons for reducing the births.

When one takes a bird's eye view of Egypt's

(1) "Principles of Economics" - Alfred Marshal, the 1947 print .. page 202.

population, two striking facts stand out with the boldness of mountain peaks among the numerous lesser landscape features; first, the very rapid growth in numbers during the past few years, and second, the equally slow growth in the national resources. With the first of these the rapid growth in numbers, the medical profession has a very great deal to do; while the second, the slow growth of resources, is a matter of grave concern to all of us. To comprehend the social significance of these facts we need not only the bird 's-eye view but, better than that, an eagle's vision in order to see distances of years ahead.

1. Rapidly increasing numbers: Since 188⁷ (the first census) Egypt's population has almost trebled. The present rate of growth is about 1.96 per cent per year, which, to some does not seem to be very great. Indeed, there are those who appear anxious for it to continue so; but let us ask them for how long? Because if continued it means another trebling by the year 2000 which is not so far distant but within the lifetime of many now living. However it is very unlikely that this rate of increase will continue for many more years, because if it should continue, we should be faced by population figures which stagger all belief, and indeed approach the utterly fantastic.

2. The tragedy of the Egyptian vital statistics.

Two general principles are evident:

(a) The general death rate will be reduced only when the birth-rate is reduced and not before.

(b) High birth-rate and infant mortality rate go together and the latter will not be reduced until the former is reduced.

As we have seen before, the Egyptian birth rate is 42.6 per thousand, the death rate is 27.7 and the infant mortality rate is 152.8. Fully to appreciate this grim tragedy that lies in these vital statistics to which birth control information has scarcely penetrated, it is only necessary to contrast them with the corresponding figures of a country like Great Britain, where modern birth control methods have been widely practised throughout the last fifty years.

In the year 1947 for England and Wales the crude birth rate was 20.1,⁽¹⁾ and the crude death rate 12.1⁽²⁾ per thousand population, while infant mortality rate was 41.6⁽³⁾ per thousand births. The average duration of human life in England is now sixty years,⁽⁴⁾

(1) United Nations Demographic Year Book 1948, page 265.

(2) do. do. 317

(3) do. do. 406

(4) do. do. 520

whereas in Egypt it is down in the region of thirty three.⁽¹⁾ But we must bear in mind that before birth control became prevalent in Britain, a very different state of affairs obtained. During the ten years period of 1871 to 1880 for instance in England and Wales the average yearly birth-rate was as high as 35.4 per thousand of population, and the death rate was no less than 21.4 while infant mortality was up to 149 and the average duration of life was only about forty years. Furthermore if we went back in the history of the British people to a time before industrial revolution we should find that the statistics were closely similar to those of Egypt to-day. And the same thing might be true in many other lands. Of course the British falling birth-rate has not been the sole cause of the present falling death rate. But that it has been a very essential factor is absolutely beyond doubt. Indeed had the old birth rate not been reduced, had an increasing number of English people not practised birth control in recent years, one simply shudders to think what the state of England must now have been.

Furthermore, if we examine the material mortality and morbidity in Egypt we must find that the figures are also high, because the essential factors that lead us to believe in this assumption are already

(1) United Nations Demographic Yearbook 1948, page 514

in existence⁽¹⁾ Add to this the fact that the majority of confinements are still attended by uncertified and ignorant midwives.

3. Children and Poverty.

Two general principles are also evident.

(1) the size of a family is determined by the ideals and sentiments of the parents, in so far as these determine their sense of responsibility to themselves and the community and their hopes and fears for the future - all very variable things. As they change, so one may expect the family size to change. This suggests that a community can if it will make whatever adjustments are needed to ensure its survival and vigour.

(2) Great stress is laid in the evidence on the economic and social handicaps which parents suffer in comparison with single persons and childless couples.

If we come to the state of affairs in Egypt, we find that there were no official surveys to bring out clearly the relation between children and poverty⁽²⁾

(1) See chapter 5 pages

(2) Nevertheless, the survey carried out by the non-official "Egyptian Society of Social Studies" which were carried out in Cairo in 1939, have generally studied long term maintenance costs, rather than the extraordinary expenditure arising from such other events as childbirth. These studies have shown an inverse correlation between family size and income.

Yet there are many British surveys and reports as well as economic books which clearly demonstrate that poverty and large families go hand in hand.⁽¹⁾

The "Royal Commission on Population" in Great Britain made this very clear when it examined "Children and Poverty". Here are some quotations - "The social surveys of the 1930's bring out clearly "the relation between children and poverty. In "the British survey relating to the year 1937, the "proportion of families found to be living in conditions "of poverty was 11.9%. But of families with four "or more children, 51.3% or over half were below the "poverty line; and for families with three children, "the percentage was 24.9 or practically one quarter."⁽²⁾ The Report also stated "At all income levels except "the highest, parents have to make considerable sacrifices to bring up their children. Children in large "families have a lower standard of living than those "in smaller families, and even at relatively high "income levels parents meet a large proportion of the "cost of their children by cutting expenditure not "only on luxuries but also on necessities like rent,

(1) See (1) "Poverty and Progress" by Rontree.

(2) "The cost of Children" by Henderson - article in the "Population Studies Vol. III No. 2.

(3) "Family Limitations", Papers of the Royal Commission on Population H.M.S.O.

(4) "Population Policy in Great Britain" by P.E.P.

(2) Royal Commission on Population Report. H.M.S.O. 1949 page 137.

"clothing and food. Savings disappear altogether from the budgets of many families as the number of dependent children increases."(1)

If to the knowledge gained from the above quotations we add the known fact that Egyptian statecraft has hitherto concerned itself relatively little with social welfare we can judge the heavy burden laid on parenthood with every additional child. Bearing in mind the scanty economic resources of the poorer classes in Egypt we are forced to seek means for reducing the size of families.

4. The Cost of Children.

The excessive Egyptian birth-rate carries with it excessive expenditure. The contrast between a man who has only his wife and himself to maintain and his neighbour with say six children is obvious. Since the amount a man spends on his children is related to his own standard of living, this contrast must be very striking in nearly all classes of the Egyptian community where the prevailing standard of living is low.

Each new child in the family means one more mouth to feed, one more body to clothe and find room for and later on, one more youngster for whom we are responsible in days when finding jobs, especially good jobs, may be difficult and uncertain.

(1) Ibid page 138.

For their first fourteen years the children cannot earn anything to contribute towards the cost of their food, clothing, housing or education.

In England, however, an attempt has been made to measure the difference which a child makes to the standard of living of the family. On pre-war figures (1937/38) it is estimated that a couple with two children on the £3 a week level required an additional sum of £1 a week to have the same standard of living as the childless couple.⁽¹⁾

Furthermore the expenditure upon children not only might handicap parents in maintaining their own standard or achieving their ambitions, but also affects the moral and the cultural standard of the family as a whole. The fewer the children in the family the more could be spent on each child, and the better start it might have in life; and no rise in the standard of the people is possible unless there is a reduction in the number of mouths to be fed.

The expenditure associated with the birth of a child, quite apart from its subsequent maintenance^{nee} is a burden which for many families is likely to be deterrent to parenthood. In spite of its importance from this point of view, no investigation of the extent and nature of the cost of child-bearing has

(1) Report of the Royal Commission on Population. H.M.S.O. page 138.

been carried out in Egypt⁽¹⁾

2. Objections to Birth-Control.

There are several objections argued against artificial control of contraception, and it is perhaps as well to notice them here. Some of them apply to birth-control in general and others to birth-control in Egypt particularly. We will consider them in these two categories.

a. Arguments against birth-control in general:

- 1) Birth-control is "not natural" and therefore to be condemned. In reply to this argument it seems sufficient to say that civilization in every phase is a process of subdividing nature and not of obeying it; it is the part of the wise man to divert the course of Nature into salutary and beneficial channels rather than to leave it alone and suffer the consequences.
- 2) It is sometimes argued that all forms of birth-control are inadmissible not only because it was "ordained" that women must be ruled by husbands and bring forth children in suffering, but because the

(1) Professor A. Henderson of the University of Manchester using pre-war surveys of expenditure estimated the effect of the addition of one child or more, in the distribution of expenditure. (See "Population Studies" Vol. III No.2 pages 130/150) But the economic aspects of child-bearing is well illustrated in the preliminary report issued by the Joint Committee of the Royal College of Obstetricians and Gynaecologists. See (Vol. I of the Papers of the Royal Commission on Population).

suffering involved may produce beneficial and enobling effects upon their characters. To ease matters by birth-control therefore would be to rob women of the chance of practising the virtues of patience and self-sacrifice. In answering this kind of reasoning it is sufficient to say that there is nothing good in this world that cannot be turned to evil purpose. The same is true of contraceptions. But this is no reason for withholding its use for legitimate purposes.

3) Sometimes they say that the propagation of birth-control methods would lead to social immorality. Dr. Reynold H. Boyd (F.R.C.S., Edinburgh) answers this argument by saying "There is no truth in the accusation that the spread of knowledge of contraception brings in its train immorality and promiscuity.." (1)

We may add here the fact that it has after 75 years of opposition in Europe and America at last moved into the area of respectability. The U.S.A. Circuit Court of Appeals has approved of it, also various bodies, Protestant and Jewish, and notably the Lambeth Conference of 1930 and the American Episcopal Church in 1934; and the American Medical Association in 1937.

4) It is often stated that "artificial methods of

(1) "Controlled Parenthood" by Reynold Boyd, page 8. Fourth Edition - London Research Books Ltd., 1947.

birth-control "are harmful to health and must
"therefore be condemned."

In answer to these unproven views it will suffice to quote the following conclusions of Dr. C.V. Drysdale "Nothing can do away with the fact that "as birth rates have declined - in the west - the "longevity of both men and women has enormously increased - from the figure of 35 to 45 years before "birth-control commenced to 60 to 65 years to-day, "and that is rapidly increasing. Moreover, recent "figures have shown that the improvement in the "death rates has taken place to a most remarkable "extent especially during the reproductive period, "both in men and women. Whatever disorders birth-control methods may have produced, there is no "gainsaying the fact that, on balance, they have "been accompanied by an immense improvement in the "health of the community. And we may confidently "expect a considerable further improvement when "better instruction becomes general..."(1)

b. Arguments against Birth-control especially applicable to Egypt, in addition to those mentioned above.

1) Birth-control is beyond the pockets of the vast masses of the Egyptian people.

(1) "Judgement on Birth Control" Eugenic Review of January, 1933, by C.V. Drysdale.

This is a valid objection; nevertheless some inexpensive method or methods especially suitable to Egypt will have to be devised and in any case advice and assistance in matters of birth-control will have to be provided free of charge for poor people. That is where the necessity of official birth-control clinics comes in. Non-official agencies will be able neither to provide the funds nor to command the confidence of the rural population.

2) Birth-control is beyond the intelligence of the people.(1)

This seems also to be a valid objection because we have to deal with a vast population of ignorant and illiterate men and women.(2) True, it will be some time before they can be made to realize the significance of the new help that contraception has brought. But this is probably not so great an impediment as it may appear at first sight. The people in Egypt have a sane attitude towards sex and once we can teach them the knowledge of contraception and the means of utilizing it, they will take it without great hesitation.

3) Birth-control is opposed to religious beliefs and sentiments of the people.

This seems to be the most important argument

(1) See "Intelligence and Fertility" by Sir Cyril Burt.

(2) 85.2% of the Egyptian population (10 years and over) are illiterate. See the Demographic Year Book of the U.N.O. (1948) page 204.

that is often met with; and for this reason it is dealt with here in detail.

Egypt has three different religious cultures; the Moslem,⁽¹⁾ the Christians (mainly Coptics) and the Jewish - Table .

Religion	Percentage
Moslem	91.4
Coptic	6.8
Jewish	.4
Others	<u>1.4</u>
Total	<u>100</u>

Table 42:

Percentage of religious distribution in Egypt.

The Moslem hierarchy does not oppose family limitation as is evidenced by the "Fatwa"⁽²⁾ on the subject issued by the Moufti Sheikh Abdel Megeed Seleem. The following is a short summary of the answer to the question "A married man has already one child and he fears that if he gets more children he will be unable to bring them up and take care of them or he might suffer a nervous breakdown from the strain involved by the upbringing or else his wife's health might suffer from the

(1) Our attention must then be on the Moslem culture not merely because they are the dominant part, but also because they represent the poorest and most illiterate part of the population. Thus, they are the part which needs restricted birth-control.

(2) "Fatwa" is an arabic word for a written answer upon an Islamic problem by a well qualified religious person.

successive pregnancies if she has no time to recover after each pregnancy. Is it permissible under those conditions for either the man or the wife to adopt some of the measures advocated by doctors to prevent repeated pregnancies so that the mother may have a rest and the father not be overburdened?

In his reply (given on the 25th of January 1937)⁽¹⁾ the Moufti considered two aspects of the question, namely prevention of impregnation and interruption of an already existing pregnancy.

In regard to contraception he stated that according to Hanafi's authorities it is permissible to take such measures of preventing germination, or introducing something to prevent the seminal fluid from reaching the womb for the reasons given above.

Originally the followers of Hanafi considered the adoption of contraceptive measures on the part of the husband or the wife permissible only if the consent of the partner was obtained. But the more recent opinion is that either the husband or the wife may use contraceptives without the partner's consent if they have reasons to fear for the child's future or their health.

(1) Journal of the Egyptian Medical Association, 1937.

The second consideration is if, despite the measures of prevention adopted, impregnation occurs can abortion be allowed? The opinion of the followers of Hanafi differ on this point. Although abortion is not sanctioned as a rule, it has now been agreed that an exception may be made and abortion be permitted Before the child is gifted with a soul if the present pregnancy endangers the life of the previous child, e.g. stopping the mother's flow of milk so that the child will starve, or refuses to suckle from a wet nurse, or if the father is unable to afford a wet nurse. Once the child is gifted with a soul abortion is strictly forbidden.(1)

In his paper on the subject, Mr. Aly Bey Fouad, Director of the Child Welfare Section of the Ministry of Public Health, pointed out that the religious point of view agrees with the medical and social points of view, as they are all primarily concerned with the welfare of the child. The statement that abortion is only permitted "before the child is given a soul" does not mean that the child is not considered to be a living entity from the beginning, but is used for the better understanding of the

(1) For more information about "Islam and voluntary limitations of births" see Bousgnet's article in "Population" 5 annee Numero 1. "Bousgnet, G.H." professor in the Faculty of Law in Algiers, whose works on economics are of such interest has also attained eminence by his profound studies on Mohammedan customs and law"

common people, who consider the child to be alive when its movements can be felt, i.e. after the fourth month of pregnancy. In Egypt it happens not infrequently that women become impregnated very shortly after having given birth. If the new pregnancy in such a case prevents the mother from suckling, this might severely affect the health and even endanger the life of such a young child. If, on the other hand, no such calamity occurs within the first four months of the new pregnancy the need for interference ceases to exist as by that time the preceding child will be old enough to be weaned without endangering his life.

3. The Urgent need for popular understanding of birth-control.

Already, a large number of thoughtful people have begun to realise the seriousness of the population problem in Egypt, but since it will take at least two or three decades to induce an appreciable proportion of the highly prolific, illiterate and superstitious Egyptian people to adopt birth-control, it does not seem to have an immediate bearing on the urgent economic and social crisis with which the country is now confronted.

If there were a reasonable certainty of increasing food production in Egypt within a few years sufficiently to relieve the existing millions

of under-fed people, this policy might be justifiable, but neither F.A.O. nor any eminent agriculturalist appears to be confident of such an immediate increase. In any case, however, it is simply cruel kindness to supply food to Egypt unless she reduced her birth-rate, as it would accelerate the increase of her population and result before long in a larger number of famished people and a greater menace to peace in the Middle East. The Egyptian Government should issue an emphatic pronouncement to this effect - and offer to provide instruction and facilities for birth-control propaganda. But governments can only make plans, and the success of these plans depends upon the zealous and efficient co-operation of the general public.

It is always argued, however, that a great number of our troubles have arisen from ignorance or denial of the Malthusian and Darwinian doctrines and acceptance of the alien doctrines initiated by Rousseau, Karl Marx, Henry George and Prince Kropotkin, which have been so constantly preached by demagogues and agitators that nearly the whole of the wage workers and a considerable proportion of educated persons have become completely obsessed by them. According to these doctrines, Nature is bountiful and there could be plenty for all with little labour if her bounty were fairly distributed, so that the poverty, brutality and wars from which the great majority of

people have suffered in the past and millions still suffer must have been due to the greed, ambition and cruelty of rich, powerful and cunning tyrants or "profiteers" and could be completely abolished if the masses unite to overthrow these tyrants and establish a new social order based on justice and equality, or "Liberte, Egalite Fraternité" But Malthus, Darwin and modern investigators have demonstrated conclusively that Nature is not bountiful and has never yielded sufficient nourishment for the needs of the unrestrained population, so that all animals including human beings, have been obliged to strive against Nature in order to obtain as much food as possible and to compete against one another to secure a sufficient share of the insufficient total yield. This has been one of our underlying causes both of poverty and of greed, as was so elequently proclaimed by Professor Huxley in his essay on "The Struggle for Existence in Human Society" - "Let us be under no illusions, then. So long as unlimited multiplication goes on, no social organisation which has ever been devised or is likely to be devised, no fiddle-faddling with the distribution of wealth, will deliver society from the tendency to be destroyed by the reproduction within itself, in its intensest form, of that struggle for existence the limitation of which is the object of society. But however

"shocking to the moral sense this eternal competition
 "of man against man, and of nation against nation
 "may be; however revolting may be the accumulation
 "of misery at the negative pole of society, in
 "contrast with that of monstrous wealth and the
 "positive pole; this state of things must abide,
 "and grow continually worse, so long as Istar (the
 "Babylonian goddess of reproduction) holds her way
 "unchecked. It is the true riddle of the Sphinx:
 "and every nation which does not solve it will
 "sooner or later be devoured by the monster itself
 "has generated."

What can be done?

All evidence shows, and most thoughtful people have become convinced, that Egypt is now confronted with the greatest crisis in its history. Our great problems are how to increase food production, reduce the birth rates and restore the morale and efficiency of the Egyptian people. The first is receiving the earnest attention of the Egyptian Government, but the great and urgent need for reducing the birth-rate throughout birth-control propaganda has been almost totally ignored.

This problem is obviously within the capacity of our government and political and social organizations to solve, so long as they all co-operate and co-ordinate their efforts towards the final goal. The present writer, however, suggests the following

steps to propagate birth-control movement in Egypt.

(1) Birth control education:

Education on family planning is an essential service which should be available to adults of both sexes. Contraceptive advice not only is necessary to prevent unwise interference which may have permanent results, but is important to secure a proper spacing of children. Also from the legal point of view the way in Egypt is paved for the propagation of birth-control advice because there is no law against such propagation or against the dissemination of knowledge on the methods of contraception. When the police decide to seize a book⁽¹⁾ on birth-control and to prosecute its author and publishers they do so, not on the ground that the information it contains should be withheld from the public, but because the mode of presentation does not appeal to their well-known sense of decency.

Nevertheless, birth-control though legal is still forced to be furtive. Advertisements of contraceptives are not taken by the daily and weekly newspapers. Contraceptive appliances are sold at large profits over the counters of most reputable chemists; but the customer must ask for them very quietly, preferably when no one else is in the shop; and they are handed over with great secrecy, in case anybody should see what he is buying and his good name be tarnished.

(1) Two or three arabic books have been published lately advocating birth-control.

It is true however, that people who have the means to buy books and leisure to read them have at their disposal a growing body of foreign literature dealing with the theoretical and practical aspects of contraception and there is nothing to prevent their consulting doctors well versed in contraception and learning at first hand a method fulfilling their own special needs.

But this, after all, is not the problem. What we want is to encourage a birth-control movement among the poor people. Therefore birth-control advice should be free of charge and readily accessible to all classes,⁽¹⁾ either sex, married or unmarried in special sessions at the ante-natal clinics and at birth-control clinics to be established for this reason in Cairo, Alexandria and other big cities in Egypt, in which the scientific knowledge and practice of contraceptives would be made available.

2. Birth-control clinics.

(1) Large numbers of working-class towns are so difficult to influence in the direction of birth-control. They are unable to afford consultations with doctors or the cost of contraceptive appliances. That does not mean that they have not discussed birth-control or, in many cases, sometime or other practised it. But the subject, as is to be expected while society treats it as a branch of pornography, has usually been discussed furtively, and information has been passed on secretly from neighbour to neighbour. In these circumstances it is not surprising that the methods used have often been ineffective and in other respects unsatisfactory.

Expert advice on contraception, though long obtainable in Egypt by the well-to-do through private doctors, has never been available to the poor, who are perhaps more in need of such advice. This may be attributable to the weight of religious opposition, which is perhaps more potent among the poor and the intellectually defenceless classes of the population. Nevertheless this state of affairs does not prevent us from saying that some people obtain their information on this vitally important subject from all kinds of hole-and-corner sources. Instead of receiving the scientific direction which was their due, to a great extent they have been forced to rely on old wives' tales, on methods that were sometimes harmful and on grasping persons who exploited them for gain.

The general routine of such clinics is now well standardized in nearly all western countries. The staff is composed of a female and a male doctor; both assisted by a number of well trained nurses. As to the main purposes of these clinics all over the world, they are designed to offer efficient services not only to a large number of married women of large families only, but also to nurses, health visitors and welfare workers who may help to spread the knowledge gained in these clinics.

In Egypt these clinics should deal, as elsewhere, with each woman individually, taking into account her particular disease, her temperament, her mentality

and her condition both physical and economic. This important function should be to prevent pregnancy.

In accomplishing this purpose, a higher standard of hygiene is attained. Not only would a burden be removed from the physician who sends a woman to such a clinic but there would be an improvement in the woman's general condition which would benefit her family in a number of ways.

All this for the diseased woman, but every argument that can be made for preventive medicine can be made for birth-control clinics for the use of the woman who has not yet lost her health. Sound and vigorous at the time of her marriage, she could remain so if given advice as to what means she could adopt to space her children and limit their number. When she is not given such information she plunges blindly into married life with damaging results.

Thus the users of the birth-control clinics can be classified as follows:

- 1) Mothers of large families who wish to stop having more children.
- 2) Those who have experienced serious shocks or danger in childbirth.
- 3) Parents suffering from hereditary diseases.
- 4) Married people whose economic conditions preclude their doing justice to more

children.(1)

The above considerations lead inevitably to the conclusion that birth-control clinics are a prerequisite to any policy for regulating the increasing Egyptian population on sound social and economic lines.

3. Rational Contraceptive advice should be a part of the public health programme.

Practical birth-control information should be included in the courses of general sex instruction to be undertaken within the framework of adult education. A great deal of this advice can further be given in general lectures as long as sensationalism is avoided and the bounds of privacy are not unnecessarily violated. The more frankness and matter-of-factness and seriousness that can be injected into sex instruction, the better will be the education of our country's youth.

To execute such a programme the network of maternity and child health stations as well as the

(1) The following extract from an English clinic report gives a vivid impression of the kind of women who go for birth-control instruction. "All sorts of women have been; some young mothers with just two or three children - the only too usual middle class number - wanting to know before it was too late how to space their families and their future babies; some older and iller and tired women with big families of nine and ten, seldom all alive, wanting to end it and have no more of this miserable succession of birth and feeble, wretched life and most likely death."

birth-control clinics which were proposed by the present writer in the foregoing pages should all give birth-control advice naturally and unostentatiously.

(4) Instruction in many of the subtleties of normal sex-life and physiological and psychological aspects of birth-control should be named in the syllabus of the Egyptian Medical Faculties.

This subject has been so neglected in Egypt that the majority of doctors now qualified and practising have received no training or instruction in contraception in the whole of their college courses.

In order that undergraduate students should take the subject seriously, it should, we think, figure both in the groups of subjects under Preventive Medicine and also in Gynecology. There should be a question on some aspect of contraception in the examination every year or two, or the students will not set themselves to master the details.

After physicians have come to realise the importance of birth-control and after they have learned the necessary techniques, it is expected that they will give information and advice according to the needs of their clients. It is therefore necessary to rely on careful supervision by the Ministry of Health to see that the reform is carried out promptly.

Physicians and surgeons could not, however, be

given a monopoly in this matter of birth-control advice as that would reduce its availability. Nurses and particularly midwives should also be utilized. The first duty of the district nurse or district midwife is to give helpful information in clinics, centre stations where birth-control advice can be obtainable. In the second place, she should herself give the necessary advice on birth-control and its technique.

Only when this system of organized public health becomes equipped to give advice on matters of family limitation is there any hope of information permeating all strata of the population.

There is no wisdom in failure to provide such information for the least enterprising in the population or in letting them beget most of the population; and family planning is seen in its positive connection with child care and maternity health and in clinics established for such a purpose, no one will shun it; and birth-control will be regarded as what it truly is; a means for making rational the foundations of a happy family life.

(5) Restrictive legislation.

A last stage, would be gradually to introduce legislation to restrict propagation of the unfit, limit free social services and raise the age of marriage.

First there are the "eugenic measures" that

might be taken to reduce future numbers of those who are unfit and a social burden due primarily to hereditary mental defects. It is safe to say that the geneticists to-day possess enough knowledge to enable society to get rid of the more glaring cases of natural deficiency without any serious loss and with very great gain. However, from our point of view it is not important whether such limitation of defectives is accomplished by sterilization(1) or institutionalization, just so long as it is really done. Recently one of the big names of the moslam hierarchy has declared that sterilization is in accord with Islam(2)

Second, using the social services to teach the people the proper civilized attitude towards children. There are several ways.

(1) Enforce compulsory education so as to take the children away from parental exploitation for five or more years, and at the same time educate

(1) Sterilization regarding certain types of our population is necessary for reducing the births and at the same time improving the quality of the population. The present writer recommends sterilizing the following; feeble-minded, insane, those with inherited tendency to crime, morally degenerate persons and others who cannot be successfully socialized whether mentally sound or not. It would seem advisable to extend the scope of sterilization to include persons who are manifestly incapable of being responsible for the care of children. This category would comprise parents already possessing say ten children and who are indifferent or incapacitated by such physical infirmities or blindness, deafness or loss of limbs.

(2) "L'Egypti Contemporaine" No. 185, Page 480.

the first three children free, but put a small tax on the fourth and those after; not enough to be a burden but just to serve as a warning.

(2) Make child welfare work free for all children, but place a small tax on families having more than three.

(3) Promise to exempt absolutely from military service the first son to attain the age, give a shorter period of service to the second (or if he is not needed, then exemption), and take absolutely the third and other sons, but compensate the parents with some sort of public recognition if the drafted sons are fit and accepted, e.g. decorations.

These devices would give the parents to think before having more than three children, and perhaps lead them to ask for birth-control information.

Third, raising the age of marriage. From the point of view of fertility we must here give particular attention to the woman. In a country like Egypt, the fertile period of a woman's life extends from about ages 12 - 14 to ages 46 - 50, a length of from 34 to 38 years. Now, the most fertile years are the early years. P.K. Whelpton and Clyde V. Kiser's study about the "Differential Fertility among 41498 Native-White couples in Indianapolis"(1) shows that fertility is low at the

(1) Social and Psychological factors affecting Fertility" by Whelpton and Kiser - Milbank Memorial Fund, 1946.

beginning of a woman's mature period but rises rapidly until it reaches its peak between ages 20 and 25.⁽¹⁾

A further point is that in the lower age groups sexual desire is stronger, so that if the young people are married, the frequency of coitus is greater by that much. Accordingly the longer marriage can be delayed, the shorter will be the time of female productivity and the less will be the fertility. If marriage in Egypt should be prohibited before age 21, one might expect the birth rate to be reduced decidedly for this reason alone.

One drawback from delayed marriage that would have to be counteracted in some other way, is the increase in prostitution might result, and that leads to another aspect of regulated marriage, viz., the medical certificate. In many countries a certificate of good health for both partners has become a legal requirement. If applied in Egypt it is probable that the effect on the marriage market would be considerable and consequently also on the birth rate, particularly of diseased children.

(1) Unfortunately we have no reliable statistics from Egypt on this point.

CHAPTER 9.

EMIGRATION.

Is emigration a permanent solution for over-
population - Immobility of the Egyptian
population - Scope for emigration (Iraq -
Sudan) - An Emigration population policy:
land settlement, voluntary organization,
reduced fares and capital.

EMIGRATION.

We now take up the investigation of the second remedy of our population problem, namely, emigration.⁽¹⁾ As there is practically no immigration in Egypt, under the operation of economic - as apart from political - causes, with which alone we are concerned in this study, the result of this movement is a diminution of numbers, or in other words a slackening of the pressure of population on the means of subsistence.

It is often argued that there is no practical necessity for a diminution of numbers, since the population of a congested tract has merely to move to an adjacent part where the land needs labour, or to

(1) The International Conference on Emigration and Immigration held in Rome in 1924, drafted the following definition - "Any person is considered an emigrant who leaves his country for the purpose of seeking work or who accompanies or goes to join his wife, or her husband, his or her relatives in the ascendant or descendant degree, his or her brothers or sisters, his or her uncles or aunts, nephews or nieces, or wife or husband of the latter, who have already emigrated with the same object, or who returns to the country to which he had previously emigrated in same conditions." The Conference understands by the term "emigrant" the individual defined above from the moment he makes preparations with a view to departure until the moment he enters the country of destination. He is then subject to the laws, regulations and conventions of that country and responds to the following definition. (1) Any foreigner who enters the state with the object of seeking work and with the intention of settling there permanently is considered an immigrant. (2) Any foreigner who arrives in a country with the sole object of working there temporarily is considered an ordinary worker.

go outside the country to places where they would be able to make an adequate living. But is this really true? Is emigration from Egypt capable of affording the relief that is needed?

1. Is emigration a permanent solution for over-population?

Before we discuss the Egyptian question, some remarks on the general question of emigration as an outlet for a country's surplus population will not be out of place. A comprehensive study was carried out by an international conference in 1937, under the auspices of the International Institute of Intellectual Co-operation in the course of an enquiry into the basic difficulties in, and the procedures for the peaceful solution of economic, social and territorial problems. From this report we quote the following remarks. "although the International "Studies Conference did not itself complete an "investigation into the validity of the hypothesis "that emigration is a remedy for over-population, "it is nevertheless, a common belief that emigration "is the classic safety-valve for excessively dense populations and the remedy par excellence for the "economic disequilibria arising out of the demographic "maladjustments commonly described as over-population.."

This however, is a general opinion which might not be always correct if it were put into application. The pre-war records of emigration from Germany were altogether dwarfed by the volume of

natural increase. Between 1816 and 1936 Germany trebled her population; from about 22 million inhabitants a century and a quarter ago, the population expanded to over 67 millions. In Japan too, the movements of emigration have been of small importance beside the immense tide of population expansion.

In Italy and Poland on the other hand the volume of emigration has been substantial both absolutely and relatively to population increase. In the former country, it is claimed that the actual rate of increase of the population was kept down to a low figure between 1900 and 1913 because emigration was on a large scale. Yet even in those two countries the volume of emigration has not been sufficient, in the long run, to keep the population stationary.

Professor Frank W. Notestein⁽¹⁾ agreed with this point of view when he writes... "Emigration does not necessarily reduce the size of the total population. "If fertility is so high that population is pressing "on the means of subsistence, and mortality is the "principal check to growth, emigration will temporarily relieve that pressure, but will then lower "mortality and increase growth to cancel the effect "of the outward movement."⁽²⁾

(1) Head of the American Office of Population Research-School of Public and International Affairs, and also of Princetown University.

(2) F.W. Notestein "Areas of population Growth" Millbank Memorial Fund "Quarterly Review" 1944 p.149.

The report of the British Royal Commission on population was more thorough in this respect and gave figures⁽¹⁾ showing the demographic effect of emigration upon the age balance of the population since emigrants are not drawn equally from all age groups but are recruited from its most active elements, i.e. the young rather than the old, the bright and ambitious rather than the dull and lethargic.

It is clear, however that the question of the effect of migration has been often discussed, but there is no universally accepted theory as to the biosocial consequences of the emigration - immigration phenomenon. However, many believe that emigration does not necessarily reduce the population of the exporting country from a long-time viewpoint, it being held that the outward movement of a group of people simply leaves more room for the remaining residents to expand. Many also hold that immigration does not necessarily increase the population of the receiving country from a long-time viewpoint, because the receiving country may adjust with a lowered birth rate of the older elements in the population. Increase in status of the resident population as they come

(1) Royal Commission on Population - Report - page 94, tables XLVI and XLVII.

to dominate the immigrant group may lead to a reduction in their birth rate, and the immigrants as soon as they become established, tend to imitate the reproductive behaviour of the groups who have been longer in the new country. Some authors seem to assume the working of a Malthusian principle on the restriction of numbers, so that as soon as population pressure is felt, numbers are automatically reproduced.

Much of the controversy revolving round this point dates back to Francis A. Walker, who in 1891 contended that immigration has made no difference in the size of the American population because immigrants had had the effect of lowering the native birth rate and had merely taken the place of additions to the native stock. Henry Pratt Fairchild is a strong advocate at the present time of the view that a steady anticipated stream of immigration does not increase a population from a long-time view, and that emigration does not decrease a population from a long-time view.⁽¹⁾ He justifies his stand in terms of the automatic working of a dynamic balance between birth and death rates and level of living.

A strong case for the contrary position, i.e.

(1) For his latest pronouncement see People, ch. XI Henry Holt Comp. 1939.

that migration affects the size of population both of the exporting nation and of the importing nation is presented by Penrose⁽¹⁾ Walter F. Willcox⁽²⁾ by an extensive statistical analysis, successfully refutes Walker's assumption regarding the failure of immigration to increase the population of the United States. Carr-Saunders⁽³⁾ also rejects Walker's theory, pointing out that, even if the declining native birth-rate of the U.S.A. were charged entirely to immigration, the increase in numbers by immigration was much greater than required to offset the lower birth-rate. Thompson presents data for Italy which suggest that the rate of increase in a nation exporting population may be reduced by emigration.⁽⁴⁾

In dealing with the effect of immigration and emigration on population growth one is dealing with a whole complex of biological and sociocultural factors. In such a situation it is unlikely that a single universally valid generalisation applicable to all situations can be drawn. As has been pointed out in chapters dealing with birth rate and

(1) E.F. Penrose, "Population Theories and their Application" p. 220-228, Food Research Institute, Stanford University, 1934.

(2) W.F. Willcox, "International Migrations" Vo. II pp. 93-167 New York, 1931.

(3) A.M. Carr-Saunders, World Population pp. 204-205, Clarendon Press, Oxford, 1936.

(4) Warren Thompson, Population Problems, Table 109, p. 383.

death rate, numerous factors affect the productive behaviour of a people within any given culture.

We may now come to the conclusion that emigration from the over-crowded ground of Egypt cannot be the sole solution of Egypt's overpopulation problem; but must be accompanied by other expedients for checking the growth of population, i.e. reduction of birth through birth control, development, raising the standard of living, industrialization, etc. For an adequate appreciation of the Egyptian problem we must consider the general problem of the mobility of labour, the scope for emigration outside the country and the conditions attending any movement on a considerable scale.

2. Immobility of the Egyptian Population.

The stay-at-home character of the Egyptian people is a constant feature of every census report; and it is not a recent characteristic.

In contrast to the Lebanese⁽¹⁾ Palistinians and Southern Arabians - all of whom have a longer commercial tradition and live near the sea - the Egyptians have not emigrated much and their communities abroad are few and far between.

(1) The Lebanese do not exceed two million, not quite half of this number is in Lebanon itself and the other half million are scattered all over the world.

The general immobility of the population is ascribed to two causes, one social and the other economic. The social cause is the bond of family life and the father's influence over his children. The economic cause is the dependence on one calling, namely, agriculture. As agriculturists all over the world have a conservative outlook and particularly in Egypt, agricultural development is somewhat slow, there is no inducement to the people to leave their homes.

But there are also special causes for this stay-at-homeness. Man, as Adam Smith has told us "is of all sorts of luggage the most difficult to be transported". The force of early associations makes him very unhappy in strange surroundings - not the Egyptians only but even the advanced Westerners - and as he has not much money with him he finds no amusement that can replace the happy evenings he spent in the midst of his family. Should illness or misfortune befall him in the home of his adoption, as likely as not he may find himself a broken man. And what is more important the change in his social position is not such that he can find a recompense therein for what he has left behind him at home. The conception of the economic man on which the science of economics is based is hardly ever fully realized in practical life. We have still to meet the man who is not moved by sentiment, who has no

domestic attachment, to whom differences of race, religion, speech, environment, or political conditions are of no account and who puts all these aside at the remotest semblance of monetary advantage. These are the initial difficulties which confront the Egyptian, as they do his more advanced European confrere, when the dire necessity of breaking old ties presents itself to both. By themselves, perhaps, they would not be insuperable; for the Egyptian, though more stay-at-home than the European, is not altogether insensible to the influence of economic causes, provided he is convinced that the balance of advantage is on the side of making the change. That he does not move is really due to the fact that he is not welcomed as an immigrant, and that in places where his labour is needed, political restrictions are placed on his elementary rights as a citizen, so that he recoils from the prospect of working under those conditions.

That the Egyptian peasant is not entirely static is proved by the amount of internal migration which has increased during the war years. The movement of the more restless and more virile labourers from (basin irrigation) Upper Egypt to Lower Egypt for work at the ports or cleaning canals during the winter off-season

is well known. Similarly the census reports show a marked movement of population to the towns, while in the war labour flowed to military camps and depots, especially in the Canal Zone. Also we have seen that the reclaimed lands in the North of the Delta etc. attract settlers from the more crowded areas when reasonable conditions of tenure and livelihood are offered. It would seem that if the Egyptian peasant is offered better prospects, and given the opportunity and means of obtaining them, he will not let tradition and family inheritance stand in his way.

We may perhaps summarize the above considerations by observing that so far as Egypt is concerned, the question of migration should be regarded not merely as one of facilitating and regulating a flow of population from an over-populated Egypt into the under-populated areas of the Middle East, but as one of redistributing the total available population of the Middle East as a whole, so as to serve as closely as possible the political, social and economic needs of each part of this area as well as of the whole.

3. Scope for emigration.

The next question that arises is that of the place to which Egyptians could emigrate. In the past there was a small movement to Palestine,⁽¹⁾ but this country is to-day suffering from severe congestion. The natural growth of the Arab population - which has about doubled in thirty years - combined with the influx of Jews to produce a heavy population pressure.⁽²⁾

The same is true of Lebanon, whose population has doubled in thirty years. The Arabic Peninsula has always been a centre of emigration not immigration.

Where then can Egyptians find a suitable environment to which they might emigrate?

Two regions offer some hope, Iraq and the Anglo Egyptian Sudan. Abyssinia is probably out of consideration for the time for political reasons. In the following pages we shall deal with the possibilities of such emigration from the economic point

(1) See E. Bromberger's article "The Growth of population in Palestine" in Population Studies, vol. II, No. 1.

(2) See R. Bache's article "Statistical Research on Immigrants in the state of Israel" in the supplement to Population Studies of March 1950 (papers presented under the auspices and published with the assistance of U.N.E.S.C.O.)

of view only - the political aspects are left aside.

(1) Iraq.

Iraq is the first country which can easily absorb a large number of Egyptian emigrants.(1) A number of features in the social and economic structure of Iraq closely resemble those of Egypt, especially as regards religion - ninety nine per cent of the population being Moslems - language - arabic - the standard of living of the peasantry, the importance attached there to river irrigation, and the predominance of agricultural occupations. Yet this should not delude us into ignoring the fundamental difference in the possible development of the two countries. Even large amounts of capital investment and huge technical improvements would not change the fundamental fact of a state of excessive density in Egyptian Agriculture within its present boundaries. In Iraq it is just the reverse; the cultivable area of the latter country is largely untilled. In contrast to the overcrowded Egyptian land, it is the under-developed of Iraq's agriculture, caused by lack of people, which accounts for the

(1) It is bounded on the East by Iran on the North By Turkey on the West by Lybia and Trans-Jordan on the Aouth and South east by Saudi Arabia. Its area contains approximately 175,000 square miles embracing three major geographic regions; the highlands of the North and the North-east, the broad central plains between the Tigris and the Euphrates valleys; and the stepps and semi desert country in the south and south west.

miserable conditions of life prevailing, among the rural population. Statesmen and judges of the country's agriculture have always stressed that what Iraq most required was people.

The Royal Institute of International Affairs in its recent survey of the Middle East stresses this point in page 239 when it writes "Egypt has "less than a third of Iraq's cultivable land, yet "has a population four times as great. This gives "some idea of the possibilities of additional "settlement in Iraq but these will remain theoretical "until there can be a complete reform of the land "tenure system followed by the full development of "irrigation resources..."

As to the available figures for the population of Iraq, Mr. Hashim Jawad in 1945 estimated the total number to have increased from a little under three million in 1919 to about $4\frac{1}{2}$ million in 1945. Other estimates put the figure as high as $5\frac{1}{2}$ million and as low as $3\frac{1}{2}$ million.

Nevertheless the official estimation of Iraq which appeared in the United Nations Statistical Year book of 1948 is 4,800,000 - with a density of 11 persons per sq. km. About 78% of this population is on land; but because of the scanty rainfall and the high rate of evaporation, agriculture as in Egypt is largely dependent on irrigation by canals. Yet carefully regulated irrigation projects

are still lacking in Iraq either owing to the lack of labour or the lack of capital or both. To remedy these deficiencies, Egypt is well able to supply an emigration population of experienced agricultural labourers and technical personnels and this will benefit both countries - Egypt by relieving the pressure of agrarian population and Iraq by developing her economic potentialities.

2. The Anglo-Egyptian Sudan:(1)

The Sudan is the second country which can/easily absorb a large number of Egyptian emigrants. It is a huge country which embraces an area of some one million square miles - one third the area of Europe and about two and a half times the area of Egypt (including Egypt's deserts).

Census and vital statistics of this huge area are notoriously defective; and knowledge of population is insufficient to reach definite conclusions

(1) The Arabic expression "Bilād-as-Sudan" means literally "Land of the Blacks" and so is a vague term which could be applied to most of Africa south of the Sudan. The name "Sudan" however is always restricted to that area of sub-Saharan Africa stretching from the Atlantic to the Red Sea which has been islamized. It is not the true home of Negro, but that intermediate zone lying between the Hamatic groups of North Africa and the Negro group of Central Africa. The English, however, use the word Sudan in a still more restricted sense to mean the eastern administrative area called the Anglo-Egyptian Sudan and it is this usage to which the material of the present survey is restricted.

about trends. It was only in 1944 that a complete census was undertaken in the urban centres of Khartoum, Omdurman, and some few other towns. For the country as a whole there are annual estimates made by the district political officers using methods which vary from place to place. In 1948 the "Sudan Almanac" estimated the population at 7,547,500.

Discounting tracts of desert and swamps which at present reduce the habitable area, there is reason to believe that irrigation engineering can turn millions of acres into productive lands. The relatively small Gezira area between the Blue Nile and the White Nile is almost equal to the total cultivable land of Egypt, yet its population is barely one million, as against twenty million in Egypt. And beyond this lie the great "Sudd" region, and great bog of the Bahr-el-Ghazal on the Upper White Nile, now enormous shallow swamps of apparently rich soil, some 62,500 square kilometres in extent and almost twice the area of cultivable land in Egypt, and which "owing to its position, its "climate and its rainfall, is too valuable to remain "for ever a marsh. There seems little reason to "doubt that in future it may be a thriving pastoral, "agricultural or timber country..."(1)

(1) Macdonald, "Nile Control".

When to this added 541,000 square kilometres of higher land in the Bahr-el-Ghazal basin, we have a total habitable area of 603,500 square kilometres or 17 times the arable area of Egypt; but with 7,547,500 persons only.

Economic potentialities of the Country. In the last twenty years the importance of agriculture to the Sudan has been the outstanding feature of its economic life.⁽¹⁾ Yet it is difficult to determine exactly the extent of future agricultural development in the Sudan, but one can safely state that there are wide cultivable areas in the Northern provinces, in Khartoum district, in Gezera, the Gash and Tokar binds the virgin land of the White Nile and the Bahr-el-Ghazal regions. In these regions cotton, dura, simsem ground nuts, etc. could be easily cultivated - as they are now cultivated at Gezera area - thus giving the emigrants the means to live and work. Yet the development of this huge crop production which is the main economic asset of the Sudan, however presents two problems - the difficulty of transport and the scarcity of efficient labour.

The development of road transport may overcome

(1) Besides agriculture and animal husbandry there are no more than a handful of small industrial undertakings in operation, and even in the widest sense of the term "industry" as covering the whole range of manufacture from factory work to handicrafts their output is insignificant and the number of Sudanese engaged in industry is only small.

the first problem to a certain extent; but it will take the Sudan, under its present financial conditions, a very long time to provide these districts with sufficient roads and railways. The second problem (labour) presents difficulties that must be clearly stated, especially when we remember that cotton is one of the crops that need many hands at every stage of its cultivation from sowing to picking. The three provinces of the southern Sudan which cover a combined area of 395,395 square miles have a total population of 2,964,396 inhabitants. Although the density of population is here greater than that of the Sudan as a whole (7.5 inhabitants per square mile) this is still too low to allow large scale development. It is therefore essential to import labour. This is already being done in Gezira as the following passage from a recent Survey by the Royal Institute of International Affairs shows:- "The fact that "during the height of the seasonal demand, labourers "are imported from Nigeria and French Equitorial "Africa indicates that the demand for labour is "greater than the supply. Thus during the year "1946/47 out of a total of 138,599 workers employed "on the Gezera scheme 110,215 were Sudanese, "12,918 were Nigerians, and 15,466 were from French "Equatorial Africa."(1)

(1) "Middle East" by Royal Institute on International Affairs page 352.

But must this outside labour be French Equatorial or Nigerians? Cannot Egypt with its surplus agrarian population provide sufficient labour to meet the requirements of the irrigated Gezira. It would seem natural in the interest of the Sudan itself to encourage Egyptian farmers to settle there. Not only are the conditions of work and even the choice of crops similar to those in Egypt but the Egyptian farmer's technique born of centuries of practice will bring the best out of the land and will in time be emulated by his Sudanese brethren.

All this of course requires a considerable measure of understanding between the countries concerned - Great Britain and Egypt⁽¹⁾ and while there is no doubt that they are drawing closer and closer together, it would be premature to affirm that they are at present prepared to solve the problem.

4. An emigration policy.

The present writer believes that an organized governmental emigration policy is indispensable.

(1) The 1899 agreement and the 1936 treaty between Great Britain and Egypt all give to every Egyptian the right to visit the Sudan or to dwell in it as an immigrant and a settler. The fourth paragraph of article 11 of the 1936 treaty specifies that "the emigration of Egyptians to the Sudan should be free from any restrictions except such as related to maintenance of health and public order." Again the fifth paragraph of the same article specifies that "there will be no discrimination in the Sudan between British and Egyptian nationals in matters of commerce migration or ownership."

The aim of this policy would be to assist emigration by financial and other means until the Egyptian farmer finds a reasonable settlement in the country of destination.

This assistance will enable him - within a reasonable period of time - to produce enough to keep himself and his dependants without thereby displacing another member of the population in his country of settlement and at the best enables him to produce such a surplus as will eventually lead to the employment of others. The broad lines of this policy will be as follows:

(1) Reduced Fares: The most obvious means of affording such encouragement is by the grant of assistance towards passages. But we fully appreciate that directly-assisted migration is but a part of a much wider question; and we must therefore stress the even greater importance of creating so far as possible such general conditions as will stimulate a flow of population between Egypt and the depopulated areas of Iraq and Sudan, which will proceed without government assistance. It is generally conceded, however, that the receipt of government assistance is apt to encourage in the migrant a tendency to rely upon governments for support and to regard governments as responsible for his subsequent welfare. It is for this reason that the present writer attaches importance to the

introduction under appropriate conditions of schemes of general reduced passage rates, which, while bringing the cost of the passage within the reach of the poor person desiring to proceed to Iraq or Sudan, yet leave the settler on arrival there in the category of an unassisted migrant.⁽¹⁾

The immediate problem, however, is to start a movement of population, and for this a considerable measure of government support. But we strongly commend to the consideration of the governments of Iraq and Sudan the desirability of aiming ultimately at a policy which, while generally facilitating the movement of population or Egyptian emigration, will involve the minimum of supervision. For certain classes of migrants, e.g. children, juveniles and possibly also single women, a measure of supervision will always be desirable, but no large stream of migration can be looked for except as a free and spontaneous movement of population taking place in response to the natural economic attractions.

Furthermore, there must, we feel, be numbers of people in Egypt who are either outside the scope of assisted passage schemes, or are not attracted

(1) The characteristic of special reduced fares as a form of state-aid for emigration is that it relieves the migrant of all the restrictions especially imposed on the assisted migrant, which often act as definite deterrents to migration.

by such schemes, to whom life and a career in Iraq and Sudan should make an appeal. Members of the professional classes would form a class of settler who should be able to make an important contribution to the development of the national life of Iraq and Sudan and the fact that such persons were attracted by conditions there would encourage other sections of the community to follow their example.

(2) Capital: The problem of providing the necessary capital is of vital importance for our emigration policy. Under this heading we include the following items of capital expenditure; (i) on land settlement schemes for the assistance of migrants after their arrival; and (ii) an employment scheme. As regards the amount of capital needed for these two items, Eggleston and Parker⁽¹⁾ estimate the average cost of equipping each breadwinner with housing, housing services and a proportionate part of farm and factory equipment to support him in a balanced community as certainly not less than £1000 for each additional inhabitant. On the other hand the development and migration commission in Australia in a report issued in 1929 estimated that the new capital investment required to

(1) F.W. Eggleston and G. Parker "The Growth of Australian Population" Melbourne (1937)

place youths of working age in employment in Australia at that time was around £500 per head. Since that date values have undergone considerable changes; and we should not be disposed to apply rigidly any calculation of this kind. Nevertheless it is obviously true that any emigration policy demands an increase in capital investment in the country in which the flow of emigrants takes place.

Some of this capital no doubt will be required for public utilities and similar purposes; but for the rest the supply of capital through the normal channels should be relied on as a criterion of the extent and quality of the resources to be utilised. In our opinion, it is neither necessary nor desirable that the inflow of capital should be artificially stimulated at the risk of inducing new production which would find no market.

3. Land settlement: The organized schemes of group settlement in Sudan and Iraq should be mainly directed to the land. The industrial development of these two countries, and consequently the existence of any considerable source of employment other than agricultural is of comparatively recent growth and the market for industrial products there is very limited.

For this reason we may suggest a scheme for selecting and training intending settlers on the land in such a manner as will obviate failure and loss.

Under this scheme, an Egyptian village working through a local committee appointed for the purpose would undertake the responsibility for selecting suitable families within its limits and for providing them with training and prepared farms in a favourable fixed farming area in countries of settlement, purchased either by the government through loans raised for this purpose, or by private companies.

As to the working of the scheme itself we cannot propose a detailed system, but it seems fair enough that profits should be distributed in partnership between the government and the tenant cultivator, each receiving 40% of the profits if the settlement is purchased by the government. The same amount of profit will go to the private company if the settlement is purchased by it - as to the remaining 20% it may go to the governments of the adopting countries, i.e. Iraq and Sudan. (1)

In order to make the scheme attractive and truly advantageous to the individual cultivator, it must be so drafted that his tenure of the land shall become absolute after a period not exceeding ten years.

(1) The Gezira Plantation Scheme of the Sudan is worked in partnership between the government, the tenant - cultivator and the Sudan Plantations Syndicate. In the division of the profits the tenant and the government each receive 40% and the Syndicate 20%

It is also desirable to establish training centres in which the conditions obtaining in Iraq and Sudan will be reproduced. Training these would include instruction in tree-felling, land clearing, carpentering, dairying, ploughing and general farming especially cotton plantation. Free travelling facilities must be given to enable the men to report to the training centres and to proceed to their homes at the end of their training course. During the period of training the farmers may receive a half share of the produce of their labour, the other half being used to defray the cost of the scheme.

4. Voluntary organization: We are of the opinion that government departments should not become directly responsible for assisting individual migrants. For this reason we recommend that provision should be made for the establishment of voluntary organizations to assist the government in its emigration policy. The organizations we have in mind would preferably be those which have branches or permanent representatives widely scattered throughout Egypt, and which are able to call upon the voluntary services of as many social workers as are needed, e.g., trade unions, co-operative societies,⁽¹⁾ etc. Moreover we consider it essential

(1) The most noteworthy efforts of this kind of voluntary organizations were made by the British Unions at the Second half of the Nineteenth century. (See Population Studies Vol. III No.3 - article by Charlotte Euskson..The encouragement if emigration by British Trade Unions: 1850-1900)

that central committees should be appointed both in Egypt and in the countries of immigrants on which the various voluntary organizations would be represented, and which could co-ordinate the activities of these organizations in such a way as to combine the maximum of efficiency with the minimum of expenditure whether of money or of effort.

The assistance which will be rendered by these organizations may fall into the following classes:

- (1) Providing assistance to the emigrants who are ineligible under government schemes or supplementing the assistance available under government schemes.
- (2) Providing training facilities in Egypt.
- (3) Receiving, placing and providing after care for certain classes of migrants mainly juveniles and women.
- (4) Finding vacancies in Sudan and Iraq through affiliated organizations.

We conclude by submitting that this suggested plan can be carried out successfully if it is backed by the resources of the advanced Western Nations, and by the various international agencies concerned with Food and People, because the opening up of under-developed areas for the settlement of immigrants would require a substantial amount of capital which Egypt could not afford to-day.

It is true, however, that investment of these kinds may be a bad policy from the short term business

point of view, yielding no interest and perhaps even lowering consumption in the wealthier countries. But in the long run and in terms of international welfare and peace probably no better investment could be thought of. Nevertheless much hard thinking will be necessary in order to bring the governments of Iraq and Great Britain (because she is a sovereign partner on the Sudan) into agreement to admit settlers from Egypt. For little relief can be expected from international population movements if their volume is still determined by national self interest or racial prejudice. A change of outlook and attitude is therefore required.

CHAPTER 10.

THE NEED FOR DEVELOPMENT.

The Need for Development.

While any change in the population trend is, under any circumstances, a serious matter with far-reaching consequences, good and bad, the difficulties that arise in the process of adjusting the economic structure of a society to a growth in its size are not necessarily of a lasting character, whereas the deceptively straight forward method of directly overcoming such difficulties through emigration is, in general, marked in its consequences by a feature of permanence.

Moreover, attempts to bring about adjustments through policies of expansion designed to neutralise growth of population through emigration, even if they are successful in achieving their immediate object may give rise in turn to new economic difficulties far more acute and of a more lasting nature than those which such policies seek to eliminate.

It is evident moreover, that a country sending out large numbers of emigrants must in fairness, if it wishes reasonable treatment for these emigrants put its own house in order. In other words, if it has a policy of sending its citizens to other countries, it must at home do everything it can to improve the social and economic conditions of its people. If it does that the standard of living will go up, the adjusted birth rate will come down, and

in time we shall have an equilibrium which will be satisfactory to everyone.

The most important thing then is that the country must produce more - more food and more industrial products. That means that production in the country must grow faster than the population grows; and unless the rate of development is more rapid than the rate of population growth, standards of living in the country will fall rather than rise. With Egypt producing less food "per capita" now than she produced before the war, a substantial degree of expansion is needed merely to get food supplies back to the inadequate pre-war averages and then a large increase above these levels is needed.

In Egypt, agricultural area per farm worker is very small, and the number of people working on the land is much higher than would be needed if even simple and inexpensive improvements were made in farming methods and equipment. A similar though less extreme, situation prevails in Eastern Europe and in parts of South America. In such countries fewer farmers with better methods and equipment could produce a much larger total food output. Before they can make much progress in reducing excessive population in agriculture, however, these countries must develop additional and more remunerative employment opportunities in other lines of work. In many such countries the number of workers in industrial

and other non-farm employment is not increasing even fast enough to keep up with the new workers added by the growth of population and their rural regions are becoming more and more over-populated. If they are really to make progress in raising living standards, these countries must develop non-farm industries side by side with farm industries rapidly enough to provide employment for all the increase in their national working force, and on top of that must make work opportunities for still more workers so as gradually to reduce the excessive population and under-employment of workers on the land. Effective expansion of industrial employment requires railways, streets, water supplies, houses, electricity and other facilities as well as factories and machines. Extensive detailed and co-ordinated plans for economic development and large amounts of capital are needed to produce this rate of growth in urban industry and employment. At the same time, agricultural, fisheries and forestry production must be increased to provide food and raw materials for the expanding industrial population. Corresponding efforts and investment are thus required in farms, and fisheries to raise the rural output. Unless a satisfactory minimum rate of development is reached, a continued rise in average living standards cannot be created.

Nevertheless, Egypt has substantial opportunities

to increase the areas under crop and the present average yields per acre by irrigation, drainage and other Nile central projects, coupled with more intensive farming, fishing and better technical methods. These would use the existing rural labour more effectively, or even make useful work for more rural workers. Such projects, however, are very expensive and generally require years to become fully productive. This line of development also calls for extensive capital outlays.

Thus the problem of Egypt's economic development may be described as one of increasing the capital equipment of the country in order not only to keep pace with the growth of population, but also through increased production per head to permit some rise in the level of consumption. This is a formidable task.

The present state of development in Egypt is probably as low as anywhere in the world. International comparisons are difficult and preclude precise conclusions, but it is possible to give a broad picture of the disparity between the national income of Egypt and these of more advanced countries. From such information as is available, it appears that average national income per head in Egypt ranges around £20, whereas in the United Kingdom it is over ten times as large and in the United States it approaches £400.

By far the largest element of national income in Egypt is derived from agriculture, which provides the livelihood for more than half and in some for as much as 80% of the population.⁽¹⁾ The heart of population problems as we have mentioned in a previous chapter is the under-employment which results from the pressure on the land. Human resources are therefore large enough to solve the problem of economic development. But so long as these people are not brought into effective use the position will become worse. Even the present inadequate standards of nutrition will be maintained, for the pressure of increasing populations will bring them still lower, and this will make it all the more difficult to create the social services which are required to combat disease and to educate the millions who are still unable to read. The growth of productive power is a gradual process which must be spread over generations. The levels now reached in the advanced countries which are themselves insufficient to satisfy their peoples' aspirations, a result of 150 years of economic development. It is the early stages which are the most costly and difficult. Basic services - railways, roads, ports and harbours, electricity and irrigation - require a vast capital investment and must be undertaken before production can be increased significantly.

The scheme of economic development proposed for

(1) M.A. Anis. "The National Income output and expenditure of Egypt - for the years 1937-1945"

Egypt is designed to improve the standard of living, to provide a minimum of social services and to supply sufficient capital and consumer goods to restrain inflation. To achieve these objectives the present writer proposes the following:

- (1) To undertake such basic developments as irrigation and reclaiming parts of the deserts in order to increase agricultural production.
- (2) To increase the supply of fertilizers and agricultural implements at a reasonable cost in order to raise the yields of the land cultivation.
- (3) To promote the full use of existing industrial equipment and capacity and at the same time encouraging industry in the villages in order to provide work for the under employed and unemployed rural populations.

These objectives will be fully discussed in the following pages.

CHAPTER 11.

AGRICULTURAL DEVELOPMENT.

Increasing the present cultivated area - irrigation -
the projected Nile Schemes - reclaiming parts of the
desert land - increasing production on the present
acreage - fertilizers - the use of improved seeds -
extending agricultural education and advisory work -
reform of the land system - mechanisation of
agriculture.

Egypt is predominantly an agricultural country. At the time of the 1947 census, 74.9% of the population lived in rural districts forming rural communities, a high proportion of which depended solely upon the land for their livelihood.

The spearhead of attack on the economic development of the country must therefore be the establishment of agriculture as the staple and prosperous industry which will keep pace with the population increase. Moreover the food problem in Egypt cannot be effectively solved without an agricultural expansion since it is a function of natural areas and population density. It is always argued that in order to continue to feed the growing population of the country even at the barest subsistence level, then increases of all kinds of food are essential; and if only the barest subsistence level is maintained, then food production cannot be increased. This is the vicious circle. A people living in dire poverty and degradation cannot cultivate increasing amounts of land, nor can the best use be made of land under cultivation. In order to increase progressively the food production of our country, standards of life must advance at the same time as production per man, production per area, and acreage cultivated. Equipment and fertilizers must be used to make our land yield the maximum possible without raising the land for future use.

Capital must be available, so that we can obtain equipment, realizing the projected Nile schemes and reclaiming parts of our deserts. Land tenure must be such that producers have the opportunity as well as the incentive to increase output.

Broadly speaking, agricultural development - hence the raising of nutrition standards has two fields of operation: the first covers the methods of increasing the present cultivated land through irrigation, drainage, etc., and the second part of the scheme aims at increasing production on the present acreage by the use of more fertilizers, better seeds and improved varieties of crops.

(1) Increasing the present cultivated area:

The first and obvious step for agricultural expansion and for solving Egypt's nutrition problem, is to bring more land under cultivation.

This can be achieved by the following steps -

(1) irrigation, (2) operating the projected Nile schemes and (3) reclaiming parts of the desert land.

(1) Irrigation:

Since the earliest times the population of Egypt has depended on irrigation for its food and prosperity. At first irrigation was a natural process, the flow of the River Nile was the only way. As times went on the flood water was gradually controlled until now, only a small part of the land

is irrigated by annual flooding, or as it is usually called "Basin Irrigation",⁽¹⁾ and the greater part is under perennial irrigation, as shown in the following table.

	Lower Egypt	Upper Egypt	Total
(1) Area under basin system.	----	680,000	680,000
(2) Area under combined perennial - basin system.	----	337,000	337,000
(3) Area under perennial system.	3,640,000	1,443,000	5,083,000
	3,640,000	2,460,000	6,100,000

Table 43: Basin and perennial irrigation for 1947-48.

Of the 680,000 feddans irrigated by basin-system 250,000 feddans are in Quena province which could easily be transformed into perennial irrigation through the expansion in digging artesian wells.

(1) Before 1820, the whole country was under the basin system of irrigation, by which the land was divided into basins, and on arrival of the annual inundation water invaded the basins, saturating the dry cracked soil, depositing a layer of rich silt on it. By October, the emptying time, dykes were opened and excess water was thus discharged back into the river. The point in this process was to give the land as much silt-laden water as possible and to drain out the surplus water. This having been achieved the land was prepared for sowing the winter crops; by April the crops were gathered and the land was left to dry and recoup.

This means that the yield of winter crops is augmented and the growing of some summer crops such as millet, cow peas, vegetables and jute will become possible.

Should the government be in favour of carrying out the project, cotton should not be allowed to be grown therein, only food crops - i.e. wheat, beans, barley, millet, etc. As to the costs of the scheme, the technical advisor of the Ministry of Agriculture estimated that each 250 feddans would require an artesian machine, that is about 1000 machines will be required for the total area. He also estimated the cost of each machine approximately as follows:

L.E.	650 Diesel engine 40 H.P.
do.	350 Pumps.
do.	500 Digging of well.
do.	400 Site and building.
do.	<u>100</u> Reserve.

2000 Total.

The costs being: 1000 machines by 2000 = 2,000,000 pounds.

We must not forget to mention here, that the execution of this project would afford employment to a great number of labourers, and it may be well worth remembering that the number of land-owners in this province is no more than 20% of the inhabitants; the rest are just labourers.

Therefore, it seems that this scheme - if introduced to the areas suffering from subsoil waters -

would be one of the answers to our population problem apart from being a step forward far increasing the present cultivated area. The expansion of perennial irrigation could not go on indefinitely; its present stage looks very much like the peak point. It would be a blessing if another system gradually took its place, a system that would not endanger the life of the fellah⁽¹⁾ and reduce the fertility of the Nile valley.

2 Irrigation (The Nile Schemes).

The ever expanding population in Egypt during the 20th Century has demanded that the flow of the river Nile should be conserved and regulated to an ever increasing extent. For this reason great engineering projects have been carried out to improve the storage capacity for irrigation; but there are other projected schemes, which if realized, would be of utmost importance regarding the increasing of the land under cultivation.

Sir John Russel in a speech on August the 31st 1949, at a special congregation of the University of Durham, held in connection with the inauguration of 111th annual meeting of the British Association for the advancement of Science emphasized this point when he said "Irrigation could still be extended considerably. The projected Nile schemes, if realised,

(1) It seems self-evident that the perennial irrigation system is largely responsible for the spread of Belharzia and hookworm, which flourish in most places.

would solve Egypt's problem for a generation."⁽¹⁾

The present writer cannot accept Sir John's point of view that realising the projected Nile schemes alone would solve Egypt's problem for a generation. It is true that these schemes would bring more land under cultivation and hence relieve the pressure of the agrarian population. But this is no more than a contribution towards the solution of the population problem which is the ultimate objective. As mentioned in previous chapters our population problem is a complex one which includes irrigation, social, economic and even administrative factors; and in order to reach adequate results these factors must be co-ordinated. This does not mean that we underestimate Sir John Russel's proposal; on the contrary the projected Nile schemes are of utmost importance for increasing the land under cultivation and providing for Egypt's surplus agrarian population.

The projected Nile schemes:

Egypt is now active in examining the possibility of extending the area under cultivation up to the limit of 7 million feddans. Having practically exhausted the possibilities of storing water within

(1) The "Times", 2/9/49. "Sir John Russel on food and population problems."

her own territory⁽¹⁾ and having already established the Jabal Awlia reservoir in the Sudan, Egypt is now looking further and further upstream with an eye always to the main problem of increasing the land under cultivation. The projected Nile schemes may be summarized as follows.

1) Wadi Rayan project: The Egyptian Government proposes to build a new dam before the depression known as Wadi Rayan, which is 43 metres below sea-level in the desert west of the Nile and south of Fayoum. It is estimated by the Egyptian Ministry of Public Works that this project will cost

(1) The main irrigation works in existence to-day are.

(a) The Aswan Dam: It is designed to store the water and let the whole river through without interruption during the period of high flood in order to avoid the accumulation of silt. It was completed in 1902 and reheightened in 1933 for the same purpose so that its storage capacity at present amounts to 5 milliard cubic metres holding water to a level of 32 metres above the natural water level of the river.

(b) Jabal Awlia Dam: Constructed some thirty miles above the city of Khartoum on the White Nile, to provide additional storage and thereby to increase the effect of Aswan reservoir. Its total storage is about $3\frac{1}{2}$ milliard cubic metres. It was filled to its maximum level for the first time only 1943.

(c) Sennar Dam: Completed in 1925, on the Blue Nile to provide water for Gezira lands between the two Niles above Khartoum. Its total storage is 0.8 milliard cubic metres and the area affected reaches some 80 miles upstream.

There are also some minor irrigation schemes doing the same purpose, i.e. controlling the Nile waters for irrigation. Esna Noga Hamadi and Assuit barrages - all built to raise the level of the stream permitting the extension of perennial irrigation and the improvement of basin irrigation in Upper Egypt. The Mohamed Ali Barrage, just north of Cairo, ensures the supply of the feeder canals of the Delta. Finally the Zifta Barrage on the Damietta branch raises the level of the lower reaches of the canals watering the eastern Delta.

twenty million pounds.⁽¹⁾

2) Lake Tana Dam: A new dam is projected to control the level of Lake Tana at the head of the Blue Nile in Ethiopia. This project has already caused much international discussion between the Governments of Egypt, Ethiopia and the Sudan. In 1946 an agreement had been reached between these governments to start the project.⁽²⁾

The cost will be eight million pounds.⁽³⁾

3) Lake Albert Dam: It is estimated that by building a dam at Lake Albert the amount of water available for perennial irrigation would increase. This projected dam is connected with the scheme of canalying the Bahr-El-Gabel through the sudd region since approximately half its water is at present lost through evaporation. The whole project is estimated to cost twenty million pounds.

4) Owen Dam: An Agreement⁽⁴⁾ has been reached between the governments of Uganda and Egypt to build a dam for controlling the water of Lake Victoria, the cost of which is estimated to reach four million pounds to be paid in equal shares by the two governments.

(1) El Masri- Egyptian Newspaper - 24th of July 1950.

(2) Unfortunately up till the present time, the work is not yet started.

(3) El Masri - Egyptian Newspaper - the 24th of July 1950.

(4) El Masri - Egyptian Newspaper - 24th of July 1950.

From this brief outline we see that the equatorial Nils schemes and the Lake Tana scheme when considered together constitute a comprehensive plan for the utilization of Nile water and storing more water to irrigate more land to produce more food for the ever increasing population.

3. Reclaiming parts of the desert land.

Egypt must look at the problem of utilizing its deserts - or at least part of its desert⁽¹⁾ - in cultivation as one of the reasonable solutions for its population problem. Ninety-seven per cent of the area of Egypt is uncultivated desert which receives an average rainfall of six inches. About one fifth of this vast area can be reclaimed for agricultural purposes. This scientific fact was proved long ago by agricultural scientists in America.⁽²⁾

Early this year "U.N.E.S.C.O." sent Ritchie Calder the science editor of the "Ness Chronicle" to make a sample survey of the problems of the arid zone. He selected the classical deserts of

(1) The word "desert" implies something hopeless. But many of these deserts are hopeless merely because we say they are, or because we have been brought up on the "School Atlas" where they are just empty voids.

(2) See "dry Farming" by Widstoe, New York. The McMillan Company, 1912.

North Africa and Egypt because in considering what men's ingenuity might do to recover the deserts he can therefore compare the achievements and failures of the past. After a long survey and a continuous research in the desert research station attached to a foreign legion fortress, Calder reached the important conclusion that "The recovery of the desert can be tackled from many different directions and in a variety of ways. But the important fact is that it can be achieved,"(1)

Yet when we are faced by the fact that the rainfall is too low to support vegetation, it would seem that the French experts are today accepting this challenge and are ploughing and sowing 50,000 acres, in the hope of getting enough rain to feed all the nomads of the Algerian Sahara. We can also say that the Egyptian Sahara of to-day was once a great forest. So it was, on the evidence of Suetonius Paulinus in A.D. 47 when he described the Forest of Guir with elephants, lions, panthers and reptiles. Moreover the Roman and Byzantine devices for controlling and conserving water-wells, underground reservoirs, diversion dams and water-holding terraces - by which they maintained North Africa and Egypt as their granaries

(1) See. The second article of Ritchie Calder of the News Chronical. "Men Fights Back" in the Picture Post of July 1st, 1950, p. 40.

and their groves, are exactly what we should be called upon to use to-day, if we wanted to recover their lost plenty. All over the Egyptian deserts are those abandoned water-systems,⁽¹⁾ warning our age evermore plainly than the ravaged splendours of the ancient cities. These wells and cisterns, silted up for centuries, have only to be cleaned out to function again. There are hundreds of them in Egypt now. And once the water can be available again, cultivation of the fertile soil⁽²⁾ can proceed automatically giving work and food for a sufficient number of cultivators.

Three factors are essential in order to reclaim and repopulate our desert land. These are irrigation schemes to supply water, technical engineers and good means of communication.

It is not difficult to find the first two factors available in Egypt, but so far as irrigation schemes are concerned, Egypt has to rely on external assistance.

One or all of the following ways are needed to make the irrigation schemes successful. (1) The exploitation of the underground water, (2) The conservation of rain. (3) The diversion of the

(1) Evidently what put the system out of action was the destruction or silting up of the headworks.
 (2) Experience in the arid region of Egypt and other like desert regions has proved that the sand of the deserts produce excellent crops whenever water is applied to them. (See page 58 of Wedtree's book - Dry Farming - Macmillan Company, New York.)

nearby river waters to the desert. (1) These methods have been tried in America and proved successful, and Egypt could follow suit.

(1) The exploitation of Underground water: This method consists of three steps: a) Locating the water supply. b) Preventing of such water from escaping into the depth of the ground by laying a cement foundation underneath the water-surface, then c) Pumping this water to the surface.

(2) The conservation of rain: During a certain period of the year, in the Egyptian eastern desert a heavy rainfall takes place which totals about 40 million cubic metres. Such large quantities of water are usually wasted away in the sand. It would be wise economically to utilize by one of the following methods.

(1) Building dams or boring large spaces into the rocks in which to store the waters. (2) Building a dam for the water in a narrow valley between two mountains and in the way of the flooded water.

The second method was tried in Egypt in 1947 with the name "Dam El Rawakka" with an output amounting to 6 million cubic metres. A similar dam will be built in "El Dayika" in 1951 and it is hoped that it will store 165 cubic metres. It is

(1) In Afganestan, this method has also been carried out with success.

predicted by the specialist technicians that it will be possible to cultivate 11 thousand feddans after the two dams come into full working order.

(3) The diversion of the river Nile to the deserts by means of canals: The Ministry of Public Works has recently published a map showing the possible irrigated areas of the Egyptian deserts through diverting the river Nile. This ministry estimates that if a canal 243 miles in length is dug from the Ismailias Canal near the starting point of "Canal Elwadi" then the following spaces of the Eastern desert could be reclaimed and put into cultivation.

- (1) 50,000 feddans in desert "Salhia"
 - (2) 30,000 do the depression "Salhia"
 - (3) 14,000 do. the depression "Tofela"
 - (4) 30,000 do. east of Suez Canal.
 - (5) 145,000 do. in the valley of "Tena"
 - (6) 225,000 do. near lake "Bardaweel"
 - (7) 17,000 do. at oasis "Manayer"
 - (8) 57,000 do. at the eastern parts of "Salhia"
- 568,000 feddans - total.

A very similar problem confronts us in the Western desert, for here it is not necessary to dig a canal in the desert. All that is necessary is to enlarge the electrical station at "Tabaria" in order to pump the water already in the canals for 10 metres from the ground.

If such a project is constructed, then, it is

possible to reclaim 440,000 feddans in the valley between the stream "Nobar" and "the desert road of Cairo-Alexandria". Moreover, if we extend "the Nobarian Stream" up till the "Alemein" and then the Kattara depression then a space of 1 million feddans could be reclaimed.⁽¹⁾

The reclamation of the salt lakes and swamps of the northern part of the Delta is also possible, and presents no serious technical problems. These marginal swamps and lakes cover about a million feddans. Lake Abukir, the smallest of the group, was drained and reclaimed into cultivable land. A number of estates in this salty region were also reclaimed by the government, various land companies and individuals. But a vast area is still lying waste and the greater part is in the possession of the government. The work of reclamation requires primarily the removal of noxious salts by proper drainage. The most prevalent salts in these lands are common salt and, to a lesser extent, sodium sulphate. In the interior of the country salty areas exist, as a result of an artificially raised-water table due to filtration from a canal on higher neighbouring fields.

By these vast schemes it would be possible

(1) Yet irrigation alone could not of itself bring this region into agricultural use. Other concurrent operations are needed - such as clearing the soil from salts, rocks and sand.

to bring almost the whole of the cultivable area of Egypt under control - and at the same time reclaim as much as possible of the deserted land. This may represent an increase of 40% on the present cultivated area. This suggests that land reclamation meets certain fundamental needs, which - as has been shown - are of an economic, hygienic or social character. Without dwelling at length on the hygienic factors, the importance of which is indeed obvious, we at once observe that the urgency of the economic needs shows itself most clearly where the pressure of population is most intense, so long, of course, as the outlet of emigration is no longer available. A typical example of this is Italy, where the annual increase of population has made it necessary to extend the area under wheat in reclaimed areas. In Italy indeed land reclamation appears as one of the means whereby food production may be expanded to the extent demanded by the increase of the internal demand.

But the economic requirements of a country cannot be met only by the cultivation of food products; industrial products must also be cultivated, and hence it is that these products have been especially cultivated in reclaimed areas of Western Europe. Undoubtedly the new tendency towards autarchy leads to an increase in the areas under cultivation, areas that must often be won back

from the marsh.

The ever increasing attention now devoted to land-reclamation can also be justified on social grounds deriving principally from the desire on land-workers to gain possession of the soil they cultivate under some form of tenancy or other. Often these desires can only be satisfied by lands regained from desert, swamps and marsh for purposes of colonization, which thus becomes complementary to land reclamation.

Then again land reclamation is useful from the economic viewpoint in that it provides work for the unemployed. Indeed in the public works plans adopted during the period 1930-1939 to find employment, land reclamation works always occupied a prominent place.

Yet even when carried out on quite a modest scale land reclamation always needs the intervention of the state. This intervention may take the form of a control of the works or of the granting of financial aid to meet a part or the whole of the costs. The works of private individuals must be carried out according to plans drawn up in advance by technical experts and approved by the state, because they are always more or less closely bound up with considerations of public welfare; whilst these considerations in their turn justify the granting of public funds in the form either of a

lump sum payment or of a meeting of a part or the whole of the interest charges due on the loans contracted to carry out the works. Efforts should indeed be made to secure an ever greater harmony between the action of the public authorities and of private individuals; and a revision of the laws regarding land-reclamation to adapt them to present day requirements would seem especially desirable in Egypt where this has not yet been done.

This revision should, as far as possible, be accompanied by such a grant of funds as would make it possible for land-reclamation to be carried out to the full extent desired. Finally it should prove possible to direct the swings of the agriculturalists themselves to this form of investment, where they would find both their surest guarantee and their fairest return in the land itself.

2. Increasing production on the present acreage.

Many persons will agree that there is little immediate prospect of materially expanding Egypt's food production by bringing in new acreage. They contend, however, that it is possible to produce much more food on our present farm acreage by the use of more fertilizers, improved seeds, better machinery, improved varieties of crops, and by extending agricultural education and advisory work. We can, thus, while retaining the technique and

resources of the individual farmer intact, employ other agents to increase the output of farming by 40 to 50%. But clearly this is an addition which will be swallowed up by the growth of population in two decades, and we may not be able to repeat our performance from decade to decade. For there are limits to the extent, to which capital can be substituted for land, and if the size of our average farm continues to shrink year by year, we cannot be far from the point at which the most efficiently worked unit will be too small for the needs of the farmer and his family.

1. Fertilizers.

Yields per acre, and therefore food production can unquestionably be increased by the use of more human and animal manures and commercial fertilizers.⁽¹⁾ Sir John Russel in his report on crop production in India in 1937, estimated that, with the more general use of organic manures, coupled with the use of nitrogen fertilizers there could be an increase in the Nation's over-all food grain supply of not less than 20%, say 12 to 1 million tons per annum.

(1) The first great achievement of science in agriculture was the discovery of the foods of plants which "Lawes" at Rothamstead followed up some 90 years ago by manufacturing these foods on the large scale. They are called artificial fertilizers and their use has increased enormously. Some 35 million tons are now made annually throughout the civilized world, valued at some 160,000,000 pounds.

If Sir John Russel's estimation is correct in India then there is every possibility that the same results could be reached in Egypt. Both soils lack nitrogen. Owing to this deficiency both are tough and heavy when wet and both dry out quickly when the rain ceases.

The recent experiments carried out in many parts of Egypt have established that, provided water is not a limiting factor, the average rice or wheat crop can be increased by about 40% with a good margin of profit to the grower on pre-war prices. Yet a large part of the farmers in Egypt did not use the amount of fertilizers that it would have paid them to use. Sometimes they could not get it and sometimes they did not understand how valuable it would be to them.

A relatively small investment in fertilizers is therefore necessary because it could be enormously helpful to increase both yields and farm efficiency and as soon as fertilizers are available, advisory programmes will be needed to help the farmers use them effectively.

2. The use of improved seeds.

Until recently pure seeds from reliable resources were not procurable in Egypt. Farmers did not pay much attention to the selection of seeds for their crop. But the Ministry of Agriculture, in an effort to meet the threat to

national economy, introduced legislation in 1926⁽¹⁾ and later in 1932 to supervise the trading and grading of seeds. As a result, improved seeds were distributed to farmers under the supervision of the Plant Breeding section of the Ministry of Agriculture. At the same time the Agronomic Section began to propagate and distribute the seeds of fields crops according to plans specially devised for this purpose taking every possible measure for the protection of seeds. The demand was slow at first owing to lack of knowledge among smaller farmers.

These ministerial measures were however no more than a beginning. The next step is to convince the farmers of the value of improved seeds, and for this purpose a minimum research service and advisory service will be indispensable in order to organize programmes of this sort and help farmers and rural leaders to get the new materials properly introduced. Adequate schemes for the certification of seeds and breeding stocks will be needed to prevent contamination and ensure continuity of the most efficient varieties.

3. Extending agricultural education and advisory work.

Although Egypt is mainly an agricultural country, its agricultural technique is still back-

(1) Law No.4 - 1926 for the prevention of cotton-mixing, and Law No. 5 for regulating cotton seed trade and permitting no trading in it before testing.

ward except in the use of fertilizers.

Up till now some of the Egyptian farmers depend, in preparing their land, on the agricultural implements, known to them for four thousand years⁽¹⁾ while the high yields obtained by progressive landlords and government stations show that the ordinary methods of sowing and tilling the land could be considerably improved. Nevertheless the Egyptian farmer, however ignorant he may be of new discoveries in the science of agriculture, is by nature receptive of expert advice in agriculture, once he is convinced in a practical manner of its good results. This has been proved on the modern experimental farms of the government and of H.M. the King where thousands of farm labourers are employed had proved that the Egyptian farmer is naturally receptive of expert advice in agriculture.

A well planned system of extending agricultural education will be, then, of utmost importance for increasing the efficiency of the farmer, and hence for increasing the output from the land.

a. Advisory work: In running such work Egypt should make use of all modern methods that fall within the three categories, namely:-

(1) The native plough, hoe (fass) and other implements which are not so different from those used by the ancient Egyptians. As regards irrigation he also uses the "Sukia", the "Shadou" the "Tambour". Harvesting of crops such as wheat proceeds by cutting, then threshing by treading of the cattle in by the "norage".

1. Through reading (for educated farmers) by means of libraries, publication distributed free of charge by the ministry, sign-posts, periodical newspapers, and correspondence in answer to queries.

2. Through listening: to broadcast and other lectures, vocational education of specialized nature, provincial agricultur meetings and congresses.

3. Through seeing and listening by means of museums, model farms, advisory visits and excursions. With a system of advisory work all farmers readjust their systems towards optimum efficiency. Especially where drastic changes are needed, some kind of individual farm plan with a timetable needs to be worked out with each large farm.

Often these adjustments cannot be made without more than advisory assistance. Appropriate agencies must make credit facilities available. Often incentive materials or money for materials - may be required for production and conservation goals. The farms plan can serve as a basis for these loans and payments and their supervision.

b. Scientific research: Advisory programmes for sustained production depend upon a symmetrical research programme. The physical and biological conditions in Egypt and the present social customs are too unlike those of Europe and America to go very far in transferring technology. Research within the country must come first.

Full use must be made of all the sciences relevant

to agriculture, and there must be a proper balance between fundamental science and applied science. Because of the popular appeal of applied science fundamental science is often neglected. In fact governments in general have been known to set up agricultural research institutes and specify that the research shall be confined exclusively to matters of immediate practical importance. This creates an impossible situation for the research worker. Frequently the solving of some immediate practical problem depends upon intensive research for basic principles before a technical process can be worked out.

c. Extension of agricultural education:

Great educational programmes will be essential for efficient agriculture. New devices will have to be invented for working with farm people not yet able to read. Perhaps even more important devices will have to be invented for fitting educational programmes to the folk ways and customs of the people in the various communities.

As to the technical agricultural education in Egypt, it is carried out at present through the following institutions.

- 1) Three schools of rural education teaching 82 boys.
- 2) Five intermediate schools teaching 967 boys.
- 3) Three faculties of agriculture teaching

1454 boys and 27 girls.

It is obvious then that agricultural education is wholly insufficient, since the agrarian working population reaches a total of 4,308,207 out of the 6,094,982 working population. (i.e. 70.8%).

The objectives of the agricultural education will be as follows:

1. To develop among the larger landowners the sense of their responsibilities to the land and its workers. It should be possible to provide a suitable curriculum at a new educational centre especially designed for the sons of the landowners. The course would include instruction on the technical side of agriculture but would correspond more with the estate management syllabus in Britain appropriately modified for Egyptian conditions.
2. To cultivate among the tenants and peasant proprietors a desire to improve themselves and their families. This is an essential factor because the tenant and the peasant proprietor present an even more difficult problem than the landlord class. They are imprisoned within the walls of their own agricultural system; year by year their numbers grow, but the walls remain. Many live on or below the border-line of adequate nutrition and begin and end their lives in debt. The peasant proprietor has neither the means nor the knowledge to improve his holding, and the

tenant has no inducement to do so. Education and propoganda are apt to be ignored or misinterpreted by an illiterate adult population. But they will generally listen to a villager, one whom they recognize and accept as a member of their own class and here lies perhaps the most feasible method of approach while present conditions remain.

3. To evolve a type of education for rural children that will fit them to live in and profit by a rural environment. In countries that are predominantly rural - such as Egypt - it is entirely logical that certain institutions should concentrate on preparing men and women for this particular task.

4. To train teachers for rural schools, and members for the Agricultural Development who will be able to evoke and guide the move towards rural improvement. Accordingly the country must be divided into a number of units. Each unit will have a model demonstration farm under a resident agronomist where the results of the work carried out by the Ministry of Agriculture's research board can be studied.

The key part of the projected scheme is a council of agriculture for each unit, charged with a variety of duties especially those already discussed in this chapter, that make for improved standards in agriculture and rural welfare. The

The council must have machinery including a link with the local agricultural inspectorate of the Ministry of Agriculture for interpreting the ministry's policy to the farmers and for passing back to the Ministry the views and needs of the area.

4. Reform of the land system.

In addition to the reforms mentioned above, one fundamental reform remains if agricultural production and the income of the cultivator are to be raised; this is the reform of land tenure.⁽¹⁾ The necessity of the reform can be better appreciated against a background of some statistics. According to the official statistical year book of 1944; of the 2,550,579 private landowners holding 5,873,206 feddans, 12,132 persons alone own 2,430,084 feddans, i.e. 0.4 only own 41% of the total area.

It is clear then, that the distribution of

(1) As one reads the literature dealing with Egypt's social and economic problems, one is impressed by the scant attention given to questions of land tenure. This is not because the nation's scholars have been callous to the economic problems of agriculture. Both agricultural credit and co-operatives receive specific mention in the numerous books and articles dealing with economic local problems. This indifference to matters of land tenure seems to be due to political obstacles. The Egyptian "pashas" are cotton lords, big business men controlling large fortunes, who hold the entire country in their grip and are utterly opposed to any measure of land reform. The government, moreover, because it represents this small section of the population, will not use its powers to modify those of the landlords.

land ownership in Egypt is unjustifiable.⁽¹⁾

As a first step towards the reform of the land system the present writer suggests that the state should gradually intervene for the benefit of the small proprietor and the landless farmer. Later on, when the state is in a better position, this intervention should lead to a land reform on the pre-war East European model, dividing all estates above a maximum size between landless labourers.⁽²⁾

The newly reclaimed land must be distributed by the government among small farmers, thereby giving them a sense of security and ownership which they have not so far enjoyed.

For the immediate present the landlord's strangle-hold on the tenant should be modified. Side by side it would also be necessary to control rents with a view to reducing the attractiveness of land to speculative investors.

Politically the reform should provide an antidote to communist propaganda while socially it would introduce that justice of which there is so much talk to-day.

(1) "It is manifestly contrary to the law of nature, however it may be defined, that a child should command an old man, that an imbecile should conduct a wise man, and that a handful of people should be stuffed with superfluities, while the famished multitudes lack what is necessary."
J.J. Rousseau.

(2) See Senator Khatabe's project.

5. Mechanisation of Agriculture.

The final method of improving the production of the farms is to mechanize cultivation. But mechanized cultivation pays only on large extensive farms, so that to make it possible in our country we have to reconstruct our farms on enormous scales. A first step in this direction would be to consolidate the individual farmer's holdings. But consolidated units would still remain too small to offer scope for the use of machines and holdings of many farmers of efficient size. How large mechanically worked farms should be in our country it is difficult to say; soil, climate, nature of the crops to be grown, and the price of farm labour will decide for each area the dimensions of the optimum unit. But even if the units are not as big as some on which cereal production is carried on in the New World and the U.S.S.R., they will be much bigger than our biggest farms. For wherever cereals constitute the sole or almost the sole product the large farm has a decided advantage over the smaller one. But the large farm mechanically operated is a labour-saving device; and area of rice land requires 93 days labour in China but only 3 days in the U.S.A. Hence any attempt seriously to mechanize our agriculture and raise output per worker will create an enormous problem of unemployment among farm workers which, as we shall shortly find, no

attainable rate of industrialization can liquidate.

To sum up. We cannot hope to increase the total supply of land in our country so that with population expanding rapidly, the amount of land per worker and income per head in agriculture will fall quickly. We can, however, try and offset the effect of rising man - land ratio by enhancing the investment of capital in farming. But the extent to which we can do so is circumscribed in several ways. First the scope for investment will necessarily remain narrow, so long as we stick to the traditional technique of cultivation. Secondly we can invest capital in our agriculture to facilitate transition to mixed farming. But the increasing density of our population will seriously hamper our efforts. We shall throw off the land a vast number of workers who can find work in other avenues of employment only at great cost in terms of human misery and suffering. Finally this problem would be greatly magnified if we attempted to mechanize our farming operations. Indeed mechanization seems hardly possible in our country in view of the enormous problem of rural unemployment that it will create.

More Food for More People.

In the previous chapter we have dealt with the various possibilities of expanding our agricultural
CHAPTER 12. A remedial factor for the ever increasing population.

In this chapter an attempt is made to deal with other food resources and examine the possibilities of their expansion; for it is our belief that the time has come when food producing resources besides agriculture should be applied and developed to assist in the solution of Egypt's population problem. These two resources are: fisheries and animal husbandry. MORE FOOD FOR MORE PEOPLE.

A national policy should be set up to promote these two industries. Such a policy will lead to an increase in:

1) Nutrition: A enormous part of the Egyptian population suffers from malnutrition. In the "Hot Springs Food and Agriculture Conference" held in 1943, the Egyptian delegation pointed out that though the people in Egypt manage to obtain the minimum requirement of calories, yet their food is extremely short in proteins. While they obtain 75% of their total calories from grain they

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get only 1% from animal protein.⁽¹⁾ Therefore, if the animal and fish resources within the country were developed to their full extent and distributed evenly they would go a long way towards reducing deficiency - and the effect on the general health of the population would be considerable.

2) Agricultural productivity: Although the Egyptian farmer is known to be active and energetic, yet his productivity if compared in physical units, is low.⁽²⁾ Crops growing gives only sparse seasonal employment and the farm labourer is left unemployed for about two-thirds of the year. This ample spare time could be profitably filled by animal breeding and - or, fishing, which would increase his stature in the field production and thus the national productivity would also be increased.

3) Variety in sources of production: It is a recognised fact that in Egypt we are more or less dependant on cotton as our cash crop. This puts us in a very precarious position especially when cotton prices fall. Thus it has always been deemed advisable to supplement cotton growing with another

(1) In order to realise "Plan A" suggested by the conference as the required level of nutrition we should increase milk production by 300%, meat production 450% and egg production 600% - see page 5 of the booklet of the Egyptian Ministry of Agriculture on "Animal Breeding".

(2) See chapter 7.

substantial source of income. Here also we find animal breeding and fishing lend themselves readily to our help. The great potentialities which these industries promise will help us not only to dispense with foreign imports of animal products and different kinds of fish and supply the local markets with its increasing demands, but also they may develop into export industries.

A. Improving animal husbandry(1)

The total number of dairy animals in Egypt is more than 1,600,000 of which 900,000 are buffaloes and 700,000 are cows; plus 250,000 working bulls and about 2,000,000 head of sheep, goats and swine.

The total production - milk, offspring, work and manure - was valued at £45,000,000 in 1944. But unfortunately this great income is hardly appreciated, since almost all that production is locally consumed.

In spite of the immense role that animal products play in the economic structure of the country, it is almost completely ignored as attention has been mainly concentrated on field crops while animal breeding is rather taken up in

(1) It may be interesting to know that 5000 years ago the ancient Egyptians considered their farm animals one of the most important factors that played a great part in their agricultural progress. See page 1 of "Animal Breeding Improvement in Egypt" - Government Press, Cairo, 1948.

an accidental way. Consequently, animal breeding has never been assigned the proper position which its potentialities justify.

A comparison with Denmark will make this point clear. According to the census in 1937, the number of milk-producing cattle - buffaloes and cows - in Egypt was about 1,400,000; while in Denmark in 1936 the number of dairy cows was about 1,600,000 - i.e. almost the same in the two countries. But the surprising fact is that the annual milk production in Denmark is over 5,000,000 tons, while in Egypt it is less than 1,000,000 tons. The same applies in poultry where 12,000,000 hens in Denmark produce 2,037,000,000 eggs, while 11,000,000 hens in Egypt produce 750,000,000 eggs. It does not seem too ambitious for Egypt to hope for the Danish standards of production. Denmark was not always one of the most prominent countries in animal production; up to 1860 it was predominantly a wheat growing country to the extent of exporting the surplus. When confronted by the competition of Canada, Argentine and Australia, instead of protecting its crop by customs barriers as Egypt does, it imported the cheaply produced wheat, and switched boldly to animal production, and developed quickly into one of the leading countries in this field. When Denmark started this, its livestock was by no means superior to

Egypt's, and the farmer was no better acquainted with methods of husbandry than the Egyptian farmer. Yet the work in the Ministry of Agriculture seems to indicate that we can have both the highly producing animal and the good breeder. There is still the more important factor that both Egypt and Denmark depend almost entirely on agriculture, and that Egypt can produce more and better animal food than Denmark. Even under the present conditions, Egypt grows an excellent winter fodder in the form of Egyptian clover known as "berseem". For summer food we have a cheap and plentiful source of protein in the form of cotton-seed cake, linseed cake and other oil cakes. We have an equally cheap source of carbohydrates in rice and wheat millings. There are also plentiful quantities of hay and straw. Surprisingly enough, most of these valuable foodstuffs were exported to many countries, including Denmark itself, while Egypt imports annually about £1,000,000 worth of animal products.

It is clear then, that the standard of production of Egyptian animals is low, both in quality and quantity. But we must admit that there had been hardly any serious efforts to raise this standard on a national basis.⁽¹⁾ A decisive policy to

(1) During the 19th century and the early 20th, cattle epidemics used to claim a very high toll which certainly discouraged the people from taking animal breeding as a serious concern. This however has been to a large extent controlled nowadays.

promote the industry is therefore essential. The sound basis of this policy seems to be in promoting production per unit; since the pressure of the increasing population on the agricultural resources and the high rent value of land is relative to the low productivity of live-stock and this would leave no margin for an increase in the stock population. In addition the policy should facilitate the introduction and application of scientific methods and new discoveries in the field of animal industry.

Artificial insemination will no doubt make a great economy, since it will save the expenses of importing great numbers of sires from abroad. In this connection it is worth mentioning that it is hoped artificial insemination will be applied on a larger scale in the country in order to obtain the maximum benefit of the good sires.

It is worth while to mention that diseases are responsible to a great extent for the low progress of animal industry in Egypt. Infectious diseases cause great losses, so it is absolutely necessary that maximum power of control over diseases should be established. In the first place we should rely on immunity whether natural or acquired. In the second place we should introduce a system of veterinary service along with health insurance as part of our local service.

Such a policy will improve the level of animal

husbandry throughout the country. This will effect the national food supply - thus increasing the national income of the country and giving greater scope for the ever increasing population.

B. Fisheries - Food from the Water.

Fish as a food in Egypt is remarkably scarce considering the extent of the seaboard and of inland waters.⁽¹⁾ This may be attributed to the low stage of development in our fisheries⁽²⁾ - compared with other countries - and the uneven distribution of fish among the population.

It has been established that the world's total commercial catch of fishery commodities is about 13 $\frac{1}{2}$ million per annum (Fielder 1938). This would give a mean annual consumption of nearly 7 Kg. for each of the 2,000 million human beings. The annual production from Egypt is estimated to be in the neighbourhood of 36,000⁽³⁾ which would give an average

(1) The Egyptian coasts stretch for more than 1500 miles both on the Mediterranean and the Red Sea; and the inland waters have an area about one-fifth as much as the agricultural land - i.e. more than a million feddans made up of about 565,000 feddans of lakes, some 400,000 feddans of Nile itself and about 12,000 feddans of canals and drains (1 feddan = one-sixteenth acre). (1-38)

(2) Fisheries in Egypt are at about the stage of development represented by agriculture among people like the Bedouin Arabs, taking advantage of the more natural resources and sometimes thereby causing damage to future development.

(3) Worthington E.B. "Middle East Science" page 112. Other authors estimate the total production to be as high as 56,000 tons. "Egyptian Fisheries" A note by El Sabi page 5, Government Press, Cairo, 1948. Yet both estimates prove that Egypt's fish landing figures are very low. A comparison of other countries landings is illustrated to pages 114 and 115 of the Statistical Yearbook of the United Nations - 1948.

annual ration of 1.8 Kg.⁽¹⁾ for its 20 million people.

The reasons for the low fish landings in Egypt are:

(1) The out-of-date methods of catching fish used by the majority of fishermen - see fig. (the total number of trawlers does not exceed 85). (2) The timidity of capitalists and commercial circles towards investing money in the fishing industry. It is true that some years ago the Misr Company started a commercial business with trawlers in the Gulf of Suez, but it seems that the mistake was made, as so often in fishery development, of starting in too large a way with trawlers too big for the job. Catches were not bad, but the quality of fish was low and the enterprise was given up as not paying.⁽²⁾ Nevertheless during the last war the British Army authorities set up a temporary plant business at the same district and it proved sufficient for army consumption.

The Egyptian fisheries are generally grouped under three main divisions:

(1) Little significance should be attached to this figure partly because the distribution of fish among the population is extremely uneven, and partly because fish is imported into Egypt - mainly from Turkey and the United Kingdom. The calculation does however, serve to emphasize the inadequacy of supplies.

(2) The high cost of refrigeration in transit necessitated by the high temperature in summer puts the prices high - for the lower income in the inland towns and villages of Upper Egypt.

- 1) The sea fisheries: The coastal line on both the Mediterranean and the Red Sea and along the Suez Canal. This source produces 26% of the total production.
- 2) The lake fisheries: Including Menzalah, Bourulus, Edkiu, Mariut, Karoun and the two depressions of Bardawell and Port-Fouad. Its total production reaches 65%.
- 3) The inland fisheries: Including the Nile and its tributaries, canals and drains spreading all over the country. This source gives only 19% of the total production⁽¹⁾

All these resources can and must be developed to its utmost potentialities in order to raise the standard of nutrition and increase the national wealth of the country. The development may be envisaged in the following stages.

(1) Administrative methods: It has been estimated that administrative measures alone could double the annual tonnage from these areas within three years. These measures should include the provision of greatly extended facilities for landing fish - boats, gear and improved refrigerated transport arrangements. It is essential also to introduce a revised system of marketing, which will suppress the

(1) "Inland fisheries as a source of food have unlimited possibilities of development provided sound cultural practices more or less akin to agricultural practices ... are adopted." Dr. Baini Prashad
"Post War Development of Indian Fisheries"

price rings formed in the major fishing ports as at Alexandria, Port-Said and Manzalah. The organization of co-operative societies will ensure something more than a bare subsistence to the actual fisherman.

(2) Fish farming: Already conducted in some parts of the country,⁽¹⁾ is a source of fresh fish for rural communities. These farms can be greatly extended on the basis of the existing knowledge and training. In areas suited to its use it probably offers the greatest hope of regional self-sufficiency and proper nourishment for all classes of people. Notable progress in fish farming has been made recently in Palestine, and although the technique best suited to Egypt would have to be worked out, this could be done quickly and efficiently by bringing existing fish farms under competent scientific control.

(3) Looking to the more distant future, there is need for establishing fishery research in order to build up a body of knowledge which is necessary before a policy can be laid down for continuous development of our natural resources.⁽²⁾ Indeed if such work is to succeed there must be intensive

(1) A carp farm was established near the Delta Barrage in 1935, then a series of fish ponds were made at Mex on the shores of Lake Mariout, not for carp only but to test the growth-rates of mullet and other species on which the fisheries of the Delta Lakes depended. The carp farm at Cairo produces large numbers of small fish to release into the rivers and canals of the Delta and thereby to supplement the natural population of Nile fish.

(2) There are however, some half a dozen scientists in Egypt devoted to the subject with a laboratory at Alexandria; and there is a small station for studying marine biology run by Fouad University of Cairo at Herdaga on the Red Sea.

study of fish, their taxonomy, size, growth, breeding-habits, available stocks and how much crop can be taken each year. Moreover there must be studies of the fish's food supply including smaller fish and other members of the animal kingdom. Likewise the chemistry and hydrology of seas and fresh waters need attention since on them depends the production of all forms of life.

The foregoing examination shows that the development of fisheries and the fishing industry will make an important contribution in the health and wealth of the Egyptian community. The Egyptian villager should come to look on fish as an agricultural crop in much the same way as he looks on grain or cotton to-day. There are always great possibilities of further development especially in areas where fishing is carried on in a primitive way.

CHAPTER 13.

RAISING THE STANDARD OF LIVING.

Social welfare services - provision of full
employment - Urban and rural wages -
security of agricultural prices and development
of co-operative societies - raising the
standard of the home.

Raising the standard of living by various devices would probably result in decreased birth rate.

It has long been noted, even back in ancient times, that, as groups have moved up into higher spheres of personal comfort, population rate of increase has declined. This is evident now on an almost world-wide scale as the improvement in vital statistics makes possible accurate studies. But this decline in family size has not proceeded uniformly throughout the community. If the population is divided into groups on the basis of area residence, of religion, or of occupation, it is found that the trends of the different groups are more or less divergent according to the standard of living available in each group.

Of these methods of breaking up the population the one that has been most fully exploited in statistical studies has been based on the husband's occupation; and this is probably also the one that provides the most valuable information.

Table quoted from the report of the British Royal Commission on population illustrated this fact.

Social Class	Percentage of average for all classes.
I Professional and higher administrative in finance and commerce.	86
II Employers in industry and retail trade.	98
III Skilled workers.	101
IV Intermediate between III and V.	100
V Unskilled labourers.	105
VI Textile Workers.	99
VII Miners.	110
VIII Agricultural Labourers.	106

Table 44: "Average size of completed families of women in various social classes who married 1851/61 as per centage of the average for all classes." Family Census England and Wales, 1911.

The figures show that the professional workers had families distinctly smaller than the average for all classes.

Even without statistical evidence of this it would be justifiable - from our knowledge of the spread of the small family system in the Western Countries in the 19th century, and allowing for many exceptions - to assume that the more educated

persons in all classes would have smaller families than the less educated. At least/^{until} recently educated people would have better knowledge of effective methods of contraception than others, and they might also have a keener appreciation of the advantages in material circumstances and prospects than members of small families enjoy.

A more comprehensive result could be obtained if we approach the study from the so-called "demographic-cycle", which takes place as a result of raising the standard of living⁽¹⁾

At present, Egypt is in the second stage of this cycle, because both death and birth rate are very high and on the other hand the standards of life and food production are extremely low. The high death rate is due to low standards of living, housing, nutrition, etc. This leads to poor resistance in infections and an impoverished and disease-ridden people, who cannot produce adequate amounts of food or do an efficient day's work.

As the standards of living and of food production begin to advance death rates fall and we enter into the third phase of the demographic cycle in which the death rate declines but the birth rate is

(1) See "Stages in Population Growth" by C.P. Blacker: The Eugenic Review of Oct. 1947.

still high, and the standards of food production and nutrition are still poor.

With increasing industrialization and improving social and public health standards birth rate begins to decline, yet in this third stage numbers still increase for some time, since death rates fall greatly and people live much longer.

These are different stages which will confront Egypt during the two coming decades if we aim hard at substantial increase in the standard of living for the masses.⁽¹⁾

The above considerations show the absolute need of raising the standard of living among the masses. The measures here advocated for our goal and which we explain in more detail in the paragraphs that follow are -

1. Extending free social work services.
2. Provision of full employment.
3. Improvement in urban and rural wages.
4. Security of agricultural prices and development of multi-purpose co-operative societies.
5. Raising the standard of the home.

1. Social Welfare Services:

Here we advocate governmental social welfare help for the benefit of the poor. Up till the present

(1) The present writer believes that the further stages in the cycle (the fourth and the fifth) are not likely to be reached by Egypt owing to the predominance of agriculture in the economics of the country, edemic diseases, the high summer temperature, which are virtually ineradicable.

time some work of this sort has been accomplished in Egypt, yet it is only a nucleus and must be followed by more ambitious measures.

The following is a resumé of the steps so far taken in regard to the important question of raising the standard of living of the agricultural working classes⁽¹⁾

1. Social Centres Scheme: The Peasant Department of the Ministry of Social Work started the scheme in 1941. Up till 1949 there were 57 centres serving only 123 villages. The scheme is primarily a popular system depending first and foremost upon the efforts of the villagers themselves under the enlightened guidance of government agents. It is designed to serve both peasant and village in all spheres of life: social, economic, hygienic and cultural. It is also meant to be as simple and inexpensive as possible, so that it may be generally adopted. Each Centre is made up of the following three units.

a. Social Services Unit; This unit is supervised by an agricultural specialist, who has taken a special course in rural social service. His role is to study on the spot all matters pertaining to the village and its inhabitants. He helps them by giving them expert advice on matters relating to

(1) The industrial workers of the city being a small minority are excluded from the present study.

their crops and procuring for them selected seeds, beehives and similar requirements. He tries to introduce agricultural industries suited to the village, new crops and modern agricultural methods.

b. Medical Unit; This is run by a full time doctor. Attached to it is a dispensary where medicines are distributed. The doctor gives first aid to injured, performs minor operations and combats epidemics. He undertakes a general medical examination of all villagers and vaccinates them against infectious diseases. He helps to procure pure drinking water and sees that the village and its inhabitants are kept clean.

c. Maternity Unit; The unit is looked after by a qualified nurse who has taken a course in social work. She pays visits to the village women, looks after expectant mothers and organizes child welfare. She is helped by local midwives whom she instructs in modern midwifery and the necessity of cleanliness.

2. Compulsory social and health services: A draft law has been prepared compelling owners of estates to provide healthy dwellings for their workers, good drinking water and other sanitary and social services. This draft law is now being studied by the authorities.

3. The raising of rural cultural standards:

The social centre contributes to the campaign against

illiteracy by organizing night classes for the illiterate grown-ups in consultation with the Ministry of Education. To each social centre is annexed a rural library provided with suitable books dealing with religious, social, economic, hygienic and agricultural matters, together with newspapers, magazines and various other publications.

2. Provision of full employment.

Of all the measures that we suggest for raising the standard of living in Egypt, provision of fuller scope for employment is the most important. Although no reliable information regarding the extent of unemployment or under-employment in Egypt is available, it is recognized that lack of employment is one of the major causes of the poverty of our people. Provision of full employment for the working part of the population would no doubt present formidable difficulties, but without it the establishment of a decent standard of living would remain merely a pious hope. "If the giant idleness can be destroyed, "all the other aims of reconstruction come within "reach. If not, they are out of reach of any "serious sense and their formal achievement is futile. (1)

In general terms provision of full employment means ensuring for every grown-up person suitable opportunities for earning his or her livelihood, that is, a

(1) Sir William Beveridge "Pillars of Security" page 43.

recognition of the individual's right to work, increased mobility of labour being an essential condition for achieving this object. Agricultural labourers are generally without work for periods extending from 3 to 6 months in the year at present. This unemployment occurs at intervals and is of a seasonal character. Provision of work during these periods is of importance if a policy of full employment is to be successful. The steps we contemplate for achieving this object are - (1) introduction of mixed farming, i.e. cultivation accompanied by dairy farming, market gardening etc. (2) provision of subsidiary industries which the cultivator can take up when he has no work on the farm. Among such subsidiary industries may be mentioned the following: spinning and weaving, shoe making, tanning, rug making, soap making, oil crushing, fruit preserving... etc.

3 Urban and rural wages.

If every person is to be assured a minimum standard of living, it automatically follows that the general level of wages must increase and that the wage rates of industrial and agricultural labour must be gradually adjusted so that the present disparity between them is reduced. The process of improvement must necessarily begin with the wages of agricultural labourers, whose number

was 1,971,896 in 1948.⁽¹⁾ It must be borne in mind that industrial wages, and with them the living standards of industrial workers, cannot be advanced beyond a certain limit unless at the same time the standard of living of the rural population is also substantially improved. Generally speaking the daily wages of agricultural labour under pre-war conditions may be said to range from five piastres to fifteen⁽²⁾ (1d. to 3d.). At these low rates the agricultural labourer hardly found employment all the year round. Obviously, a number of these workers exist below the subsistence level, always an easy prey to epidemics and famines. When the developments in agriculture that we advocate in our plan have taken place and the reforms of the land system have been carried out, it will be necessary to fix minimum rates of wages for agricultural labour on a regional or local basis.

4. Security of agricultural prices and development of multi-purpose co-operative societies.

Large fluctuations in prices of agricultural commodities have been among the most important factors which have prevented agriculturalists from making more sustained efforts to improve the yield

(1) Demographic Year Book of the U.N.O. page 234 (1948).

(2) At present these wages are from 10 piastres to 25. (2d. to 5d.)

of the land. To check these fluctuations in future and to assure to the cultivator a measure of security in respect of the prices of his crops, we suggest that for the principal agricultural crops the government should adopt a policy of fixing fair prices. In fixing a fair price account should be taken of the cost of living in the area concerned as well as the cost of production. It would be necessary for enforcing these prices to build up adequate commodity reserves which would be utilized to check violent fluctuations. To prevent a depression in the prices of specific agricultural commodities as a result of foreign imports, the volume of imports should be regulated by means of tariffs or by fixing quotas. It is possible that a large variety of agricultural crops may in future be subject to international agreements. Such agreements, provided that Egypt is accorded fair and independent status in respect of them, may be expected to lend to a fair measure of stability at a reasonable level in the prices of some of our staple crops.

Co-operative Societies: Another factor adversely affecting the cultivator's output - and consequently his income - is that, owing to the disabilities and handicaps under which he markets his crop, his realizations fall considerably short of the prices which he might otherwise secure. There are several

reasons for the large differences observed in respect of most ~~in respect of most~~ of our agricultural crops between the price paid by the consumer or exporter and the price realized by the cultivator. As the holding power of the cultivators is generally small, he has to part with his crop almost immediately it is harvested, and it is well known that prices during harvest-time are at their lowest except of course in times of abnormal demand. Very often the purchaser is the money-lender himself, to whom the crop is sold under a tacit understanding, previously entered into, at what is generally an uneconomic rate for the cultivator. Only a small proportion of the cultivators take their produce to the marketing centres for sale. In most cases, for lack of adequate facilities for storage and finance, it is sold in the village itself, which prevents the cultivator from securing a better price. If multipurpose co-operative societies are established the difficulties which the cultivator is experiencing at present in marketing his crop, particularly in the matter of adequate finance and storage facilities, would be removed and his share in the price paid by the final consumer increased. Special attention should therefore be devoted to this type of society, which so far appears to have found little encouragement in the Egyptian co-operative movement.

Development of communications, regulations of markets, spread of commercial intelligence, etc., would further help the primary producer to realise his due share of the price.

5. Raising the standard of the "home".

In order that technicians and capital may do their work the under-nourished and fatalistic villager will have to do an immense amount of hard work and saving and scraping, and jettison old customs and traditions to the extent of developing an entirely new way of life. He will not do this without some very great incentive; and the reformer has hitherto found him strongly resistant to mere economic improvement, even when such obvious methods of improving crops etc. are demonstrated, or when land reform is recommended.

Where is the incentive for all this effort and change to come from? The standard of living is the standard of the home, and the home is in the charge of the housewife; upon her depend most of the things which add up to a high standard of village life. It is she therefore, who must provide most of the incentive. So far however, she has not received much attention. The knowledge of the possibility and desirability of better homes and healthier families must be brought to the woman if the application of technical progress and capital investment is to be successful.

The key to the door of raising the standard of living is what was suggested before, but the key words that will turn it in the lock of apathy and malnutrition and so move the rusty hinges of ancient custom, and open the way to a higher standard of living, are "home" and "the training of women".

To conclude - we must put it clearly that there is nothing inherently impracticable in such a change and no reason to believe that it would be attended by a decline in production. From the standpoint of regulating production Egypt is already one huge "managerial" estate, the irrigation service controls water supply and with it crop areas. Moreover the government has now a great degree of control of agriculture on a planned basis. It would be easily possible to redistribute the ownership of land leaving methods of production unaffected, and there would be no reason to expect a fall in yields or decline in areas, since the government could continue to regulate crop area and rotations as it does now. From the standpoint of management the reform of land ownership would be easier to carry out in Egypt than in any other country.

CHAPTER 14.

INDUSTRIALIZATION AS A REMEDIAL FACTOR.

Early development and recent growth - Prospect of industry: mineral resources, the labour force, the internal market, industry based on Agricultural product, the hydro-electrical projects - conclusion.

Industrialization as a remedial measure:

Industrialization has been proposed by many writers as an economic measure calculated to relieve Egypt's population pressure. This policy has been widely advocated and acclaimed by political leaders, business men, militarists, economists, and others.

The basis of this policy will be examined in a moment. It is however, necessary first to state the argument for industrialization correctly in relation to the population question. The issue is not "population versus industrialization", as it is often defined by many persons. We need not choose between increase of numbers on the one hand and re-organization of our economy on the other. On the contrary we should industrialize our economy, even if we decide to control births, and we may have to restrict the growth of our population even if we can industrialize our economy.

We do not want further increase of numbers to extend our industrial structure; we can easily accomplish this with our present strength: what we do want is to solve the problems which our increasing population has created.

The question that may arise then can be put like this: "Can industrialization solve the problems which our increasing population has

created?" or it may be put this way "Can we
 "industrialize our economy rapidly enough to
 "accommodate this immense working population?"

Obviously, to be able to answer this question we must give an idea of the scale and potentialities on which industrialization must be achieved in Egypt. This can be furnished by drawing a picture of the structure of modern industry and the prospects of its development in the near future.

1. Early development and recent growth:

After the historic experiment of Mohamed Ali⁽¹⁾ (1805-1849) to industrialize Egypt, industry kept in the background of economic activity almost to the eve of the first World War. This may be attributed partly to the fact that the population of the country during the nineteenth and early part of the twentieth century, was comparatively small, and agricultural expansion could absorb the growing numbers. Such industries as existed during that period were not of the manufacturing type, but were chiefly those connected with the processing of some local raw materials (e.g. cotton

(1) Under the system imposed by Mohamed Ali, all the profits were reserved to the government; the managers of the factories were, for the most part, salaried government officials ignorant and unenthusiastic about the work they were called upon to do. The machines imported were still novelties and enormously expensive, while few had mastered the new machine technique.

and sugar) or with public utilities. Egyptian capital was lacking, and even were it available industrial ventures were risky and could count on no protection from the state. Investment in landed property or urban buildings was the current vogue, but investment in industry was alien to the mind of the average Egyptian.

Coming to the first World War and after, we find that Egyptian industry made some progress in development. The inflationary rise in prices engendered by the expenditure of foreign troops gave an impetus to local enterprise especially after the reduction in the volume of imports in the period of unrestricted submarine warfare. Some of the new industries did not survive for long after the war. However, the nineteen|twenties witnessed a rapid expansion in the industries producing building materials. The period also saw a new phenomenon, namely the rise of industrial and commercial concerns of purely Egyptian capital. The governments of the day urged by the rise in the national spirit could do little to protect the infant industries owing to the fact that capitulatory Treaties were still in force, limiting the tariff on imports to a general ad valorem rate of 8%. When the last of those treaties expired in 1930, Egypt was free to inaugurate a new tariff policy which has given a large number of promising

industries the protection they have long awaited. The number of new industrial establishments started in the decade 1928-37 was 54,989, which exceeds by nearly 5,000 the number of establishments dating from the beginning of the nineteenth century to 1928.(1)

The Bank "Misr" which was founded in 1920, was one of the prime movers in Egyptian industrialization and the Bank's subsidiaries include companies for the manufacture of textiles, including the spinning and weaving of cotton and wool, the weaving of silk and rayon, vegetable oil pressing and soap-making, cigarette manufacture and the quarrying of marble. Including the bank itself, the group comprises nineteen companies with a total authorised capital exceeding £4 million.

A further spurt to industrial investment occurred during the second World War. With foreign supplies virtually cut off after Italy's entry into the war, local production expanded and firms were working to full capacity, with two or three shifts per day. The establishment of the Middle East Supply Centre in 1940 helped to develop existing industries and to further interregional trade in order to make the area as a whole as self-

(1) Annuaire Statistique. Ministry of Finance - Cairo 1948 page 416.

sufficient as possible, thereby saving valuable shipping space. The Allied Expeditionary Forces placed large orders with local concerns, and in certain cases supplied them with technical assistance and equipment to overcome bottle-necks. The armies established repair-shops and operated new factories in an attempt to supply the great military base with part of its requirements. Throughout the war, there were experiments in the use of hitherto neglected local raw materials and sources of power, and many of the factories turned to the use of Mazout and oil seed cake in place of coal.

New mineral resources were tapped and the production of oil expanded to a considerable degree following the intensive exploitation of the "Ras Gareb" field. New machines were improvised and a beginning was made in the production of spare parts. Above all there was a welcome increase in the supply of skilled labour, which may constitute the corps of labour necessary for a future development plan. Despite the imposition of an excess profits tax, industrialists made large gains owing to war scarcities and the inflationary rise in prices⁽¹⁾

(1) At the end of 1944, the wholesale price index number stood at 330 (June - August 1939: 100)

2. Prospects of Industry.

According to the 1944 census of production - the first of its kind in Egypt - which has recently been published, there are 129,231 factories all over the country and the workers engaged in them number 316,144⁽¹⁾. The spinning and weaving industry alone accounts for 9,425 factories; industries connected with food come second accounting for 5,749 factories, manufacture of leather 1,230, mechanical industries 1,245, carpentry and woodwork 1,050, chemical industries 371 and construction materials 354.

As to the size of the factories, sixty three per cent employed less than five persons and 1.3% employed a hundred workers or over. The numerical preponderance of small scale industries is plain for a country starting on industrialization yet the size of the industrial units varies - not very widely from one industry to another.

Table VI of the census gives the general cost structure of Egyptian industry. Of what the Census termed industrial expenses amounting to £E 144,156,525 raw materials accounted for £E 114,986,611 (79.8%) the cost of labour £E18,165,098 (12.6%); fuel, electricity and maintenance of

(1) This number does not appear to have exceeded 10% of all these gainfully employed.

machinery £E 8,088,337 (5.6%); rent and depreciation of buildings and machines 2,916,488 (2%). Raw materials in nearly all manufactures accounted for nearly four-fifths of the total industrial expenses.

The most striking feature of Egyptian industry is its extreme concentration. This bulk of industry is concentrated in Cairo and Alexandria, in which are to be found two-thirds of all enterprises employing ten persons or over.

As regards capital only 1.2% of the firms have a capital of over £E.1,000 and only 0.5% a capital of over 10,000.

1. Mineral Resources:

"The field of employment", says Alfred Marshal, "which any place offers for labour and capital depends, firstly on its natural resources, secondly on the power of turning them to a good account, derived from its progress of knowledge and industrial organization; and thirdly on the access that it has to markets in which it can sell those things of which it has a superfluity."(1)

Regarding the first point we can say that the prospects of further industrialization through the exploitation of mineral resources⁽²⁾ are not bright,

(1) Marshal "Principle of Economics" 8th edition, page 668.

(2) The writer assumes that the natural resources of Egypt are mainly mineral.

even to the extent of supplying local needs. The principle difficulty lies in the inaccessibility of most of the minerals, and the consequent high cost of production which prevent successful competition with other countries.

Nevertheless, at the present time Egypt's output of important industrial minerals is confined to Petrol, Manganese, Ore and Phosphates. These are the only minerals produced in sufficient quantities.

Petrol: In 1938 production of oil (crude) was below 250,000 tons, but following the discovery of oil at Ras Ghareb on the Gulf of Suez, production in 1939 rose to 742,000 tons. Intensive development during the war resulted in 1,349,473 tons being produced in 1945 and 1,282,305 tons in 1946. Imports of crude oil as domestic production increased and now only indigenous crude is refined at the Suez refineries of the Anglo-Egyptian Oilfields and the small Egyptian Government refinery. These two refineries supply all local requirements of Butagaz and all the civilian and military requirements of motor spirit in Egypt. They also supply about 12% of civilian Kerosene requirements, 40% of the civilian diesel fuel requirements and about 50% of the total fuel oil requirements excluding bunkers. In addition they supply all local asphalt requirements, leaving a considerable surplus for

export.

Phosphate: The other chief mineral deposits being worked at present are the phosphate mines of Quaeir and Safage which produce about 40,000 tons a year but have large reserves. Practically all this phosphate is exported, although about 100,000 tons a year, costing £E.700,000 is re-imported in the forms of superphosphate.

Manganese Ore: Production of manganese ore, mainly by one British Company operating mines at Abu Zineima on the Red Sea coast, averaged about 150,000 tons per annum for the 3 years 1936-38. In recent years, however, production has stopped owing to the fact that the dues on shipments through the Suez Canal make the price of the ore prohibitive. Exports are now confined to clearing stocks which accumulated during the war. These totalled 10,803 metric tons in 1945 valued at 18,340 and 33,820 metric tons, valued at 45,383 in 1946.

Furthermore of the Eastern desert at "Um Reig" and "Jug El-Bahar", large deposits of lead and zinc are known. The abandoned gold mines of Egypt are numerous, at least three could go into profitable production now under favourable conditions, as could also lead deposits.

Lastly, there are the great and much discussed deposits of iron ore in the "Aswan" area.

It is curious that whilst Egypt possesses such rich iron ores in great quantity in this area and in the Eastern Desert, cast iron cost £E.140 per ton in Egypt in 1946 whilst it is produced at £E.20 per ton by the Tata Company in India. The same company produced corrugated iron for buildings and roofing at under £E.15 per ton, whilst this important and much needed commodity now costs £E.75 per ton in Egypt.

Development of Resources: The first step towards further development of mineral resources is to undertake a systematic geological mapping and prospecting of the country; the second step is to reconstruct at least the three roads which could serve the Eastern Desert south of Cuseir, an area of about 50,000 square miles, and, thirdly to remove sufficient restrictions to allow the opening up of the known deposits of lead, zinc, copper, nickle, tin, wolframe, chromite, gold, ilmenite, graphite, sulphur, flourspar, gypsum, magnesite, clays, salts, road-making materials in Southern Egypt, and of marble and ornamental stones on a moderate scale, sufficient to supply local requirements, and at the same time train miners and foremen for the contemplated large-scale future development of these deposits and of the many undeveloped deposits of other materials which are known, but

not yet investigated.

Such a policy would give employment to thousands of men,⁽¹⁾ thus extending the habitable area of Egypt in what are now desert areas. At the same time, this work would provide practical experience for the growing supply of trained Egyptian engineers and mining graduates.

2. Labour Force:

The foregoing analysis of the mineral supply of Egypt justifies the general view that Egypt is lacking in fuel and iron resources. However, it does not follow that the further industrialization of Egypt is therefore impossible.

In this connection it is worthy of note that after a realistic analysis of the nature and source of national power, Bertrand Russel concluded that such power is dependent on two factors: the number of population and extent to which the nation's population is capable of public organization, and the mineral resources that the nation possesses.⁽²⁾

With regard to the first point, it is obvious that Egypt had an excessive agrarian labour force⁽³⁾ In fact, there is probably no industry in the country

(1) The number of men employed in mining and quarrying is now about 11,000.

(2) Russel, B.A. "The prospects of industrial Civilization" London, George Allen Ltd. Unwin Crp. 1923 p.192

(3) See ch. "Is Egypt Overpopulated" page

that could not recruit all the unskilled labour it required within a few days or weeks.

What however, is lacking is an adequate supply of skilled workers and technically trained personnel. But to remove this want, we require more capital to invest in human beings, to feed, to educate and train them properly and not merely a larger supply of men and women.⁽¹⁾ This will tend to increase the supply of skilled labour and reduce the present high premium attached to it.

The nucleus of the new labour force is to be found in the vast number of technicians who received some training in the workshops of the Allied Expeditionary Forces during the last war, and in the graduates of technical schools who are at present rotting in clerical jobs in the administration. The period of training in industrial art schools could be reduced by eliminating the unnecessary subjects added during the Great Depression, when it was thought advisable to lengthen the period of training as a measure for combating unemployment. In the building industry mobile labour units could be formed, while village labourers could be mobilized to help build their dwellings. The supply of skill could also be increased by importing foreign workers from industrially advanced countries and from the displaced person's camps in Europe. On the

(1) See "Principles of Economics" by A. Marshall - ch. on technical education page 209 and page 216.

managerial side use could be made of the large number of civil servants who had first hand experience of business while acting as sequestrators in businesses owned by enemy aliens during the war.

3. The Internal Market: On the side of demand, it is clear that we have a population big enough to enable us to realize fully the economics of division of labour and capitalistic production. That in practice, however, division of labour is extremely imperfect, and large scale enterprises are still few in our country is explained by the fact that mere numbers do not define the extent of the Egyptian market. Potential consumers must have enough income to be effective purchasers and an increase of numbers which is not accompanied by growth of purchasing power may restrict rather than widen the market for industrial goods.(1) This is obvious in the case of luxury goods, the demand for which increases with the income of the purchaser; ten men with bank balances buy more cars than a hundred persons who keep their savings in stockings. But this is true of even the common necessities of life in our country. Where, as in the U.K., income per head is high enough to cover expenditure on these and something over, increase of numbers is followed by expansion of

(1) See "Income" by A.C. Pigon, McMillan Cm. London 1946, chapter II.

consumption and investment, which takes place independently of short-period variations of national income. But if income per head is already low, as in our country, increasing population may restrict individual consumption more than it adds to the number of purchasers or temporarily maintains consumption at the expense of permanent investment and long-term income. The existence of unsatisfied human want is not equivalent to effective demand. Otherwise we should not have a slowly expanding output of cloth, even though millions in the country go about insufficiently clothed.

But the lack of such an internal market is more serious since it is determined by the low level of earnings of the farm population. Again we cannot successfully develop mixed farming and cultivation of protective foods, unless we create and expand the market for higher agricultural products. But these markets are usually provided by concentrations of urban population in command of higher purchasing power. The prosperity of Danish agriculture and the success of Danish Co-operatives have been greatly helped by the easy access they enjoy to the wealthy market of the United Kingdom, and our agriculture will become efficient in proportion as our country is industrialized.

4. Industry based on Agricultural Products:

The best hope of industrial growth is from the manufacture of the products of Egypt's agriculture. Several spinning and weaving factories are in operation, which owe their success largely to the production of cheap goods for local consumption, particularly by the peasants. While these may grow some day to the extent of providing most of the fabrics in local use, it will obviously be a long time before they can successfully produce manufactured goods of sufficiently high quality for the foreign markets. One great obstacle to cotton spinning is the climate with its great diurnal variations in temperature and humidity.⁽¹⁾

Fruit packing is frequently advanced as Egypt's most hopeful industry. Judging from the quality and abundance of her excellent tropical and subtropical fruits and her accessibility to Europe, this industry ought to be able to employ thousands. But Egyptians themselves recognise that the moral quality of her labour in such activities must be greatly improved before they can succeed. In spite of laws and inspectors,

(1) Humidifiers have been tried on a small scale, but for large scale operations making the finer fabrics, the cost is considered prohibitive.

frequent complaints come back from foreign countries regarding mixed varieties of cotton and shipments of rice and onions gone bad through careless handling or failure to sort out spoiled pieces.

Scope for Small Industries.

The author believes that adequate scope should be provided for small-scale and rural industries along with large scale industries, i.e. to bring the work to the worker.⁽¹⁾

This is important as a means of reducing the need for capital - particularly the external. Moreover it offers employment to the ever increasing agrarian population.

The average agricultural worker in Egypt, works only 180-210 days per year. This means that he remains semi-idle for about half the year. This number of working days may even be less in certain districts and will certainly decrease in the future after the inevitable introduction of modern agricultural methods. This fact, added to the ever-increasing population, aggravates the problem of unemployment among small farmers in general and wage-earners in particular.

The Egyptian Government therefore, must do its best to encourage cottage industries so as to enable

(1) See "Scotland's changing population" Foreward by Sir H. Hetherington, page 25.

the poorer people in the villages to use their leisure time profitably. The work must start at existing levels, primitive as they may be, then I think we may find it possible to blend with the existing culture and habits a suitable kind of what is called "modern technology" which the workers can make their own and which they can then continue to adapt, increase and improve just as the developed countries did.

The present writer does not think it needs to take as long as might be assumed. Two or three years might accomplish amazing results, even with the most backward peoples. The following industries are now being practised in some villages which are near to the big cities of Cairo, Alexandria and the provincial cities of Upper and Lower Egypt.

1. Popular cloth weaving on hand-loom: The average production per loom per month is about 250 metres. These looms helped a great deal in the provision of cheap cloth during the last war.
2. Carpet, rug and blanket making.
3. Basket-making and kindred industries:

In villages where there are many palm trees, basket and rope-making from dry palm branches and palm fibre has been encouraged.

4. In some villages, the straw plaiting, used as a foundation for the tarboosh (fez) has been made.
5. Needlework, knitting and dressmaking. In each

Social Centre and Rural Welfare Society groups of girls have been formed for instruction in needlework, knitting and dressmaking under the guidance of resident nurses and other visiting instructors. This has helped in proving a source of income for poorer village girls and has enabled them to use their leisure time profitably.

Similarly, there is a still greater field for immediate development in terms of the next few years at very low cost in the translation of modern engineering and technological processes into small-scale operations and operations specialized for application to give local resources. All over the country then are existing laboratories and experiment stations, not nearly enough of them but enough to produce results that would amaze any of us in a matter of two or three years, if they could apply their known methods and train people in such application. Research people are to a certain extent available in Egypt, and astonishing accomplishments might be made if their efforts were directed properly towards the improvement of industries based on agricultural products.

5. The Hydro-Electrical Projects:

The generation of hydro-electric power from the great dams and reservoirs of the River Nile is an important project for further industrializing the country. These projects and the subsidiary

industries can easily absorb thousands of the unemployed agrarian population.

The most important project of these is the electrification of the Aswan Dam.⁽¹⁾ This project has been the subject of interminable studies, procrastination and intrigue since its announcement as a practical proposition in 1912. Plans for its execution were laid down in 1932, but were postponed indefinitely in the economy campaign of that year. After the last war the project was revived and in January 1947, the sum of 10 million was appropriated out of the General Reserve to finance the scheme pending the issue of an internal loan. Barring unforeseen contingencies it is expected to be finished by 1953.

The projected power installations will have a capacity of 450,000 H.P. They will supply large rural areas with electricity and, through the

(1) The Aswan Dam was built in 1902, ever since then has given tremendous impetus to the development of perennial irrigation and the cultivation of summer crops, particularly cotton. It was heightened in 1912 and reheightened in 1933 for the same purpose, so that its storage capacity at present amounts to a 5 milliard cubic metres, holding water level of the river. The total length of the Dam is 2.141 metres, and it contains 188 sluices. Its construction up to and including the final stage has cost a little of £1 million. (see fig.)

establishment of pumping stations, extend the area of perennially irrigated land by about 250,000 acres; but its main objects are twofold. The first is to provide power for a large electro-chemical plant for the manufacture of nitrogenous fertilizers to supply half Egypt's annual requirements of between 600,000 and 800,000 tons. The other is to create an electro-metalurgical industry based on the non-sulphurous dark hematite ore near Aswan, which is rich in iron oxide, the contents varying from 55 to 88%⁽¹⁾. And although this industry may not satisfy all the country's needs of iron and steel goods, it will be a valuable asset in the national economy. And finally, the cheap power that will be available when the scheme is completed will no doubt encourage the initiation of other small industries, and may result in a reduction in the cost of production of firms already established.

In concluding this analysis of Egypt's prospects of industrial development, it may be expedient to emphasize the several most salient points discussed. That Egypt will continue to industrialize is a generally accepted fact. But the writer does not suggest that Egypt is likely to become an industrial country to the exclusion

(1) It is estimated that there are some 15 million tons of this ore; see Report of the Goodwill Trade Mission to Egypt, 1945-46.

of agriculture.

A spectacular growth of industry is not to be expected as long as the internal market remains limited by the poverty of the masses, while exports of finished goods are at present unthinkable.

Egyptian industries will be restricted to the relatively few branches in which raw materials are obtained on the spot, such as tanning and leatherwork, cotton textiles, sugar, chemical industries, paper, etc., or in which the imported raw material forms only a small part of total cost, e.g. cigarettes, furniture, etc. / But above all Egypt should concentrate on agricultural industries - dairying, preserved fruit and vegetables, jams, sauces etc. Here economic factors seem to be favourable and the main obstacles may be described as social, i.e. the absence of high standards of cleanliness and professional honesty, indispensable in such industries.

Nevertheless there seem to be good prospects for Egyptian mining, especially oil and iron ore, in which an export trade may be built up. Moreover, the expansion of oil production, and possibly the electrification of Aswan Dam, may solve Egypt's fuel problem and remove one of the main obstacles in the way of industrialization. Another obstacle, the inefficiency of labour, and dearth of technicians, will also become less acute as more experience is

is gained, and education becomes more widespread.

✓ We must also bear in mind that there is a certain amount of fallacy in the suggestion that industries will find employment for an unlimited increase in population. At the most, as far as can be seen at present, industry may absorb a few hundred thousand additional workers out of a population that soon may approach 21 million.

0 But the development of cottage industries by bringing work to the worker - (populat cloth weaving on hand-looms, carpet-rug-and blanket-making, basket-making, needlework and knitting, and kindred industries...etc.) will give work to the ever-increasing agrarian population, take them out of their farmer context, break the cake of custom and permit the growth of new individualistic aspirations. It is also important to women as a means of giving them new independence and a milieu for the dissemination of new ideas.

The promotion of industry as a whole in Egypt has a vital part in the Egyptian Economy. For except in sparsely peopled countries of extensive cultivation, such as New Zealand or Argentina, it is impossible to attain a decent standard of living on agriculture alone. The main reason for the prosperity of Western European agriculture compared to that of the Balkans is that the farmer

produced for an internal or external industrial market. / Agriculture can be prosperous if it is integrated in an industrial system which at once draws off its surplus labour and buys its produce. Meantime the higher wages to be obtained in industry will tend to raise the wages and the standard of living in the country, either directly by offering a visible standard of comparison, or indirectly by causing a movement to the towns. In return the prosperity of industry will be increased by an improvement in the standard of living in the country district as this will lead to an effective demand for a wider range of articles.

CHAPTER 15.

IMPORTANCE OF INVISIBLE EXPORTS.

Tourism - Egypt as a tourist centre - the development of shipping and air transport.

Importance of Invisible Exports.

Among the means of increasing the national wealth in Egypt we must not fail to mention "invisible exports" which - if well organised - make no small contribution to the Treasury and to economic life in general.⁽¹⁾

(1) Tourism.

Until very recently, the Egyptian tourist industry was the only item of importance under this heading; although this was loosely organized and not exploited to the best advantage.⁽²⁾ Yet tourist trade develops national assets in which Egypt is particularly rich: namely its historic interest, its invigorating climate; its picturesque scenery and its opportunity for sports; in the exploitation of which a considerable capital expenditure has been made on hotel accommodation and other attractions.

From the economic aspect, modern tourist traffic is significant in that it indicates and to some extent itself occupies the large place

(1) The importance of "invisible exports" in general may be judged from the fact that the "invisible exports" between the member nations of the European Economic Co-operation in 1949 was stated to be 2,500,000,000 dollars as against 9,000,000,000 dollars of visible exports. (The Scotsman 12th May 1950).

(2) Tourism in Egypt is directed by the "Department of Tourism" annexed to the Egyptian Ministry of National Economy.

belonging to services as distinct from goods in the economy of to-day. Physical goods, their production, distribution and consumption, were for long the familiar objects of economic analysis, while services remained comparatively neglected. In recent years, however, with increased mobility of persons and higher standards of living in many countries have probably become a relatively larger part of total output and they have recently begun to receive more attention, with which tourists are principally concerned - transport and hotels. Moreover the short term movement of consumers is an important supplement and often an important alternative to the movement of goods and services. Many goods and services can be traded by being moved physically to consumers, other goods and services which cannot be moved can be traded if consumers will move to them. The effect of tourist traffic is thus to extend the possible range of trade and increase its possible volume.

All forms of passenger transport, by land, sea, or air, depend (to a great extent) for their livelihood upon tourists; and while it is not possible to measure that dependence with any accuracy, a rough indication of it is given in many countries by the marked and fairly regular seasonal variation which passenger transport often exhibits.

All these economic advantages inspire us to

believe that the tourist industry in Egypt, if it is well organised and exploited to the best advantage can be of great benefit to several branches of local trade and industry and will be a permanent source of foreign exchange.

As a tourist centre, Egypt has at present four attractions to offer:-

1. Its unique winter climate, with abundant sunshine, scarcity of rain and mild invigorating weather. This by itself should prove a very powerful magnet to Western Europeans during the winter season. It may be pointed out that Cairo has an average of over 6 hours of daily sunshine in January, whereas London's average is less than 2 hours a day in the same time.
2. Its ancient and medieval structure and monuments, some of which are known to almost every schoolboy throughout the world.
3. Its spas and health resorts. In the neighbourhood of Cairo alone there are three springs of mineral water with recognised therapeutic value. At present they are but primitively exploited, whereas they can be very profitably capitalised.
4. The immortal battlefields of the second World War. There is no doubt that one of the decisive battles in history was fought on Egyptian soil along the North West Coast. The names of Sidi-Barrani, Mersa-Matruh and Alamein have come to rank with the

towns of Flanders and Picardy which have acquired a lasting historic interest. On the analogy of those early battlefields, our own should prove a great draw to many thousands either for sentimental reasons (e.g. to old warriors and their families) or out of mere curiosity.

In addition, the climate of Egypt in summer, especially in the coastal resorts is deplorably neglected. And if our summer climate does not attract to the country as many summer visitors as we should like, an improvement in the resorts will at least draw a considerable number of Egyptians who, for lack of reasonable amenities at home, look for them at the long-established and well-organised European centres.

All these considerations urge us to bring back to Egypt the position it held in tourism before the war. Between 1935 and 1939, the number of visitors that Egypt received yearly varied from 42,670 to 39,702, expending on the average an estimated £10,000,000 a year. In 1948 the number of tourists did not exceed 2,328, and their expenditure is estimated at no more than £232,800 - a trivial proportion of the pre-war income, even if we were to disregard the fall in purchasing power of the £1.

True, the cholera epidemic, the Palestinian war and the adverse propaganda carried out by some for purposes of their own, have had a noticeable effect in

reducing the number of tourists coming to Egypt. But we have hopes that by organising propoganda abroad, by simplifying customs formalities, by creating a special branch of the Police to look after the interests of tourists, by raising the cultural and moral level of guides and interpreters, by providing entertainment and satisfactory accommodation, Egypt will once again be in the forefront of tourist centres, and that she will recapture from such rivals as Italy and France the profitable trade that they have deflected from her.

Further, the tourist industry in Egypt must adopt a new outlook. In the past it has catered for a few wealthy visitors, who had plenty of time and money in their hands. But now-a-days it is not a rich man's affair only, but something that can be enjoyed by all classes. It would seem then a sound policy if we tried to tap those large numbers of middle-class tourists who get a short annual holiday. The great development in air transport has made it possible for any European national with only a fortnight's holiday to spend at least 10 days in Egypt. If a class of people finds suitable hotels at moderate charges, and other facilities such as reduced railway fares and second-class sleeping cars (as in Europe), the odds are that any active publicity campaign to attract them will be amply rewarded.

In short, we must make the most of the wonderful gifts nature has bestowed upon us and our forefathers have bequeathed us. This cannot be achieved without some initial capital expenditure on improvements and amenities to attract not only the few who are wealthy, but the many whose means are moderate. The latter in themselves have an immense potential publicity value. If Switzerland is the "Playground of Europe", Egypt can easily become the "Rendez-vous" of the whole world⁽¹⁾

2. The development of shipping and air transport.

Another possibility that has lately been exploited is the development of shipping and air transport. In 1938 Egypt had 52 sea and ocean going vessels of 55,887 tons.⁽²⁾ Some Egyptian ships did valuable work during the war and a few were lost by enemy action. But new ships have been added since the war ended. Bank Misr did the pioneering work in this direction, and now other companies, controlled by well known Egyptian capitalists, are assisting in bringing to the country

(1) Even during the years of the second World War Swiss holiday resorts received large numbers of foreign visitors 92,865 in 1943 and 74,713 in 1944. (Statesman's Year book 1946, p. 1293).

(2) Statesman's Year Book 1946, p. 866.

valuable foreign exchange and in offering a new kind of employment to Egyptian youth. It is significant that the tonnage of goods loaded and unloaded at Egyptian ports in an ordinary year amounts to about 8 million tons,⁽¹⁾ of which the share of Egypt is almost negligible. Egypt must aim, therefore, at building up an adequate merchant navy. This will not only allow the country to partake of a larger share of the lucrative trade of transporting her own imports and exports, but will also not leave us, in times of emergency, short of shipping space for the importation of essential commodities.

Passenger transport is hardly less important. Each year some 50,000 passengers leave Egyptian ports and a similar number arrive. Air traffic is also increasing in volume and regularity. Apart from the prestige to be gained by Egypt's participation in this traffic, the cash returns are quite handsome.

To complete our brief account of invisible exports reference should be made to the growing number of Egyptians who earn their living abroad in different professional capacities. They are

(1) In 1946 goods loaded amounted to 3,045,000 tons, and goods unloaded to 4,902,000 giving a total of 7,974,000 tons. Statistical Pocket Book, Cairo, 1948, p. 240.

naturally distributed in Middle East countries where Arabic is the local language. Egypt has also become the chief cultural centre in the Arab World, and has thus attracted hundreds of students to the schools and colleges. And although this item adds but comparatively little to Egypt's annual income, yet it is a welcome source in that it is fairly new and capable of further growth.

CHAPTER 16.

TWO MAIN NEEDS

Trained men - capital.

The tentative proposals made in the previous chapters for tackling the problem of population in Egypt suggest that the country is in some measure willing to solve the problem and fight against the evils of poverty, hunger, illiteracy and disease. How much she can do in the next few years and how far she can go in the population policy will depend primarily on two main things - (1) how many trained men will be available to help in putting the population policy into practice; and (2) what extra supplies of capital will Egypt be able to obtain from abroad, over and above what the country can pay for itself. Only if Egypt can acquire these in sufficient quantity and quickly enough can she put the "Ghost of Malthus" back into the cupboard.

I. The need for trained men.

The ability of Egypt to develop her economic resources and raise her standards of living depends on the country's success in raising the productivity of the individual worker. The increased use of capital equipment, whether in the form of irrigation works, power stations, or farm tractors, will only be possible and can only bring its full benefits if the knowledge and skill of the Egyptians enable the country to use this equipment effectively.

Thus an essential part of Egypt's population policy is the provision of trained men whether social workers, experts or craftsmen, to carry out the projects already suggested in this thesis, to initiate other schemes in the programme, and to raise the level of technical skill among agricultural and industrial workers. It is for this reason that, in addition to directly productive projects, provision must be made for training institutes, technical schools, research laboratories, field stations, experimental farms and other agencies through which knowledge can be increased and disseminated. These schemes, although many of them are small in terms of capital cost, are indispensable to the success of the population policy as a whole.

The extent and nature of the need for technical experts depend on the size of Egypt's own technical resources, on the success it has had in the post-war years in recruiting and retaining personnel from overseas, and on the new demands arising from its development programme. The present writer laid particular stress on the expansion of agriculture through large multi-purpose projects. It is not surprising therefore that the keenest demand is for civil, electrical, mechanical and hydraulic engineers experienced in the construction of large dams, the erection of hydro-electric stations and

the laying out and operation of irrigation and drainage work. Experts in social science and management agronoments and ecologists are equally necessary. Then there are those who have to organise and propagate birth control methods besides those who have to organise the instruction of settlers in the Sudan and Iraq in improved methods of cultivation, the use of fertilizers, the use and maintenance of modern equipment and the introduction of power driven equipment to cottage industry. To bring the multi-purpose projects to speedy fruition this wide range of experts must be on hand at the right time and in sufficient numbers.

There are three main ways of overcoming the shortage of trained men:

- (1) By training more people in Egypt;
- (2) By ensuring that adequate training facilities for more Egyptian students are available overseas in universities, technical schools, public utilities and private manufacturing establishments of all kinds;
- (3) By obtaining more trained men from abroad.

A. Local training: There are many people in Egypt who are skilled in village crafts and in working as individuals with simple tools, using traditional methods. There are few however, who have had any training in large scale industrial production or in applying modern technique to

agriculture. It is not simply a question of the top-grade expert. Hundreds of these will certainly be wanted, but so too will thousands and thousands of foremen and skilled and semi-skilled workers who must be trained locally, and even in the case of the most highly skilled technicians it will often be more satisfactory to provide training inside Egypt. The expansion of training facilities in Egypt is thus a vital element in our plan for economic development. The Egyptian government of to-day has plans for the expansion of its existing institutions of higher education, and is paying particular attention to establishments to increase the skill of the ordinary worker and to train farmers in the use of their implements, the use of improved seeds and the application of fertilizers.

Egypt in 1948 had no fewer than 25 trade schools, three of them conducted by benevolent societies under government supervision, the rest government schools. These schools give thorough education over a matter of five years free of charge.

There are also 22⁽¹⁾ industrial schools and 5 engineering Faculties - two in Cairo and the third

(1) The Statistical pocket yearbook of 1945. Egypt, p. 50.

in Alexandria. As to agricultural technical schools there are only 5 and 3 rural centres.⁽¹⁾

The present output of trained men is therefore insufficient to meet growing needs, and if adequate expansion is to take place in the country, then substantial assistance will be needed from overseas to provide fully competent staff and the necessary equipment.

B. Training overseas: Egypt must send as many of her students abroad as she can afford. In Great Britain for example, the Universities and University Colleges at the beginning of the academic year 1948-49 had a total student population, mainly full time, of about 100,000 of whom nearly 8,000 came from overseas (about 400 from Egypt.)

It is hoped that it will be possible to increase this number in future years. Certainly the need for increased facilities abroad for study and research in agriculture, medicine, engineering and education will continue for many years ahead. An important facility for overseas training is that provided by private firms which make arrangements for apprentices and students to spend a period in their factories acquiring knowledge of

(1) *ibid*, p. 79.

the methods of production and the problems of management. This type of training is particularly valuable in view of the quick practical benefits it can give to the country.

There are also 150 Egyptian Government employees training in the U.S.A. under the terms of President Truman's fourth point, from whom valuable assistance may be expected in due course provided their number can be speedily augmented.

C. Getting experts from overseas: The provision for training, whether in Egypt itself or overseas, cannot meet the most urgent needs, that must be satisfied if the programmes for economic development are to be achieved recruitment from overseas of a sufficient number of scientific technical and educational specialists. It is impossible to say at this stage exactly how great the demand will be over the next five years, but the present writer estimates that approximately 100 overseas experts will be needed. This total will comprise 60 engineers, 10 agricultural and 10 industrial experts and 20 medical specialists of all sorts.

The length of time for which a particular man is needed varies from a few months to three or more years.

By these three means it will be possible to provide an initial corps of trained men in every

department of productive work and the framework of a training system to perpetuate such a corps in the future.

2. The need for capital

The shortage of capital is the main limitation on the execution of the population policy described in this thesis. This arises simply from the poverty of the country. Its productivity and national income per head are so low that the tax structure is inevitably narrow and the taxable capacity inadequate; the flow of savings is insufficient, for the great mass of the people have no margin above subsistence level. Consequently there are very limited resources with which to finance the capital expenditure required for development. In Egypt the total home-financed investment is now about 3 per cent of the national income; in some advanced countries this figure runs about 20 per cent, and in most advanced countries it is as much as five times the Egyptian figure.

The present situation is in the nature of a vicious circle. Economic development cannot proceed because the rate of saving is inadequate; saving does not take place because there is insufficient development. The problem then is to find means of remedying this shortage of capital. Development will by its own momentum ultimately bring about a solution for, as productive power

and national income rise, so the proportion of the national income that can be saved will grow. The amount of savings available therefore rises cumulatively until at a high stage of development the country can finance a high level of development expenditure.

Yet the traditional means by which the vicious circle of lack of savings and lack of development has been broken is by injection of foreign investment. Without the use of external resources the government must either restrict its development programme or divert internal resources to development work by cutting down the standard of living. The latter process could be achieved by a ruthless mobilization of the economy including direct action to cut consumption. Alternatively it could be accomplished by inflation. This would be a slower and less obvious process, but it would just as inevitably involve a reduction in living standards. Indeed it might also have other serious consequences for it would tend to discourage savings still further, and might adversely affect production.

Egypt needs a large initial stimulus in the form of foreign investment. She needs more goods to enable her to carry out her development programme - not only capital goods, but also consumer goods for the workers engaged on the different projects - the foreign investment provides

these goods. In other words, it enables the country to have a larger balance of payments deficit than would otherwise be possible. This is the primary function of the foreign investment. Without it the country would not be able to afford to buy from abroad sufficient capital or consumer goods and the development programme could not be carried out.

At the same time foreign investment can incidentally help to provide the internal finance which the government needs to pay the workers and the contractors for the development programme. The precise technique by which the flow of capital from abroad is transmitted into finance for the government will vary from time to time. But in one way or another foreign investment can serve a double purpose, providing both external finance to meet the balance of payments deficit and internal finance for the government.

Yet the real obstacle to the importing of foreign capital is likely to be the Egyptian people themselves - government officials or private members of the intelligentsia. The evils arising out of Egypt's excessive expenditure financed by foreign loans contracted between 1862-73 are

fresh in many memories.⁽¹⁾ The growing burden from the Suez Canal project augmented by Ismail's enormous expenditure at Constantinople and elsewhere, his sumptuous entertainments, all terminated in the tragic selling of the canal share⁽²⁾ and subsequent deterioration of the national finance which led to the British occupation in 1882. This very recent history lingers in the minds of the people causing a natural prejudice against indebtedness abroad.

Moreover Egypt is now facing a powerful wave of nationalistic feeling against the interventions of foreign states in the country's internal affairs. This feeling, in its origin purely political, has undoubtedly repercussions in the economic field, for past experience has inevitably caused an association

(1) Loans Contracted 1862-1873.

Year	Lender.	Nominal value.	Net Amount received.
1862	Fruhling & Goschen	2,293,000	2,640,000
1864	" "	5,704,000	4,864,000
1865	Anglo-Egyptian	3,387,000	2,750,000
1866	Fruhling & Goschen	3,000,000	2,640,000
1867	Banque imp. Ottomane	2,080,000	1,700,000
1868	Oppenheim.	11,890,000	7,193,000
1870	Oppenheim.	32,000,000	19,973,000
1873	Bischoffsheim.	7,143,000	5,000,000
Total:		68,497,000	46,760,000

(2) In 1875 the 176,602 shares in the Suez Canal Company were sold by Khedive Ismail for £3,916,582 to the British Government of Lord Beaconsfield.

in the public mind of foreign capital with political interference.

Yet formidable as these obstacles are, the need to raise the standard of living and solve the population problem is paramount and demands a courageous combating of these prejudices by propaganda and education. Egypt must realise that conditions have altered since the nineteenth century. Economic co-operation has become the normal practice between nations. International institutions such as the International Monetary Fund and the International Bank for Reconstruction and Development have been founded; international economic plans have been launched such as the Marshall plan, the Colombo plan. All of these are dependent upon foreign capital and it is unthinkable nowadays that these exchanges would lead to the imperialistic exploitation that Egypt fears.

The Egyptians must, therefore, choose between two clearcut alternatives; either they will progress and solve their population problem by taking full advantage of the international economic facilities available, or they must resign themselves to perpetuation of the present conditions. The reasonable choice is obvious.

Yet the ability of Egypt to obtain foreign investment funds is influenced by a number of factors. These include the ability to convince foreign

investors or lending institutions that she is prepared to use the funds effectively and to repay them; the willingness of private individuals to make foreign investments; the willingness of individual governments to make inter-governmental loans; and the ability of international financial institutions to meet demands upon themselves. We cannot give any accurate information about these factors here, but the point that we must stress is that there must be greater security against the various risks to which foreign investors may be exposed in Egypt.

The ability of our country to undertake such guarantees depends on the anticipated position of Egypt's balance of payments. Yet the uncertainties surrounding the future balance of payments position of potential capital-importing countries and other factors affecting the security of foreign investments have given rise to proposals that the function of guaranteeing transfer and perhaps other risks, be assumed by the government of the capital-exporting country as the International Bank for Reconstruction and Development. Under current conditions, however, emphasis naturally has been placed on unilateral guarantees by the government of the capital-exporting country.

It is evident that such guarantees essentially shift the burden of risk from the individual

investor to the community as a whole in the capital-exporting country. To the extent that events may require guarantees to be made good on an appreciable scale, it may be more accurate to consider them as subsidies of foreign investment, since the possibility of financing them through premiums to be paid by the investors themselves may be regarded as remote. A government desiring a portion of its capital exports to take the form of private equity investments may consider it legitimate to assume risks which individual investors are unwilling to undertake.(1)

The guarantee which Egypt will offer may take various forms. Assurance of transfer may be limited to income from the investment or may cover depreciation and depletion allowances as well as the capital itself. Guarantees may cover transfer of the proceeds of the voluntary sale of assets, and of compensation in the event of nationalization or forced sale, to nationals of the capital-importing country. Coverage may vary according to the amount or type of income or capital guaranteed and also according to the time within which the guarantee is to be made effective. The guarantee may be extended to cover not merely

(1) Provision for governmental guarantees of private foreign investments is contained in the U.S. Economic Co-operation Act of 1948 as amended in 1949 by Public Law 17 of 81st Congress.

transfer risks but also the risk of loss of income or capital resulting from specific events outside the investor's control, such as confiscation, inadequate compensation for nationalization, war, civil disturbances, etc. Although guarantees are usually thought of in the form of assurance, relating to equity capital they may assume the form of government loans or government-guaranteed loans to domestic enterprises for financing foreign operations - repayment to depend upon the earning of a specific profit.

In view of these fundamental facts the present writer strongly believes that loans to Egypt will be made in the hope that progressively she may reach the stage at which self-financing will not be an empty word.

Let us now examine the other side of the problem - the amount of capital we require for the whole population policy.

It is extremely difficult to estimate the amount of capital we shall require. In the first place this will depend upon the kind of economic development we want to erect in our country. If we aim at autarchy or a high degree of industrial self-sufficiency, we shall need a full complement of heavy, medium and light industries, and the amount of capital necessary to achieve our objective would be large. On the other hand, we may

concentrate on those industries in respect of which we enjoy natural advantages securing the residue of manufacturers by way of international trade, and as these would be chiefly "light" industries, our capital needs would be smaller too. If our industrial policy were guided by economic considerations alone, we should have a structure of the second type rather than the first. The reasons for this choice are obvious. We have, in the first place, a small supply of capital and an abundance of labour. We, therefore, enjoy a natural advantage in respect of light industries. Secondly, our aggregate need for capital will depend on whether we choose to plan our economic development or leave it to the forces of "Laissez Faire" economy. The choice will influence the amount of capital we shall want.

Planned development will call for larger capital than unco-ordinated expansion under "Laissez Faire" and the expansion of individual industries receive more attention than those which arise from the simultaneous growth of a variety of enterprises. This often results in arrested development of the former simply because other industries necessary to support them on the side of demand or supply are non-existent or undeveloped. On the other hand under planning the development of

different industries is co-ordinated; they act and re-act upon one another providing raw materials and markets for one another and creating by their simultaneous growth a fund of experience and a climate of opinion in which adaptation becomes easy.

Both economic and non-economic considerations suggest that we should have a sort of loose planning to our economic development rather than leave it to the forces of the free market. We have to make up a long leeway and create new employment opportunities on an enormous scale, and these can be done by a sort of loose planning.

How much capital, then, do we require to evolve an economic development that will be a big step forward towards solving Egypt's population problem? Writing on the industrialization of the countries of Eastern and Southern Europe in which basic economic conditions resemble those in our country, P.N. Rosenstein Rodan concludes that the amount of money required per worker can be put at between £300 to £350.⁽¹⁾ The estimate is based upon a classification of industries into heavy, medium and light, includes provision for housing,

(1) See "Industrialization of Eastern and South Eastern Europe" by P.H. Rodenstein Rodan, Economic Journal, Sept. 1943.

communications and public utilities, and allows for a certain number of heavy industries in the scheme, though light and medium industries - in particular the former - preponderate.

If we adopt the standard suggested above, we shall require for a working population of five millions an aggregate capital supply of 1500 million pounds.⁽¹⁾ To this sum have to be added an appropriate amount to cover the cost of maintaining old and new capital and a further quantity to provide for irrigation (Nile Schemes) and the development of agriculture in general. In other words, if we are going to depend upon Mr. Rodan's estimate, the total capital may reach 3000 million pounds, which seems high bearing in mind that our national income is only 502 million pounds. For this reason the present writer does not feel competent to estimate the total capital required for the whole plan since he depends upon one source of information only - that of Mr. Rodan. The population problem in Egypt as shown in this thesis is so wide that it touches almost every side of economic development in the country. Hence, to translate all these factors into terms of the capital needed for their solution is clearly a task for a committee expert in financial costing. The pattern of the committee and the procedure required is seen in the "Colombo Plan"

for Co-operative Economic Development in South and South East Asia" and it is the present writer's earnest hope that the services of the British experts on the Colombo Plan Committee may be available as advisors to the Egyptian Committee here suggested. These experts, with their previous experience in South and South East Asia, would bring the work of the Egyptian Committee from the realm of theory on to a practical footing.

In the Colombo Plan the figures covering a period of six years were as follows - India 818, Pakistan 145, Ceylon 60, Malaya and British Borneo 61 million pounds - which, compared with the high estimate arrived at by Mr. Roden, are an indication of the immense economies that could be effected by a well chosen commission.

For the supply of this capital, we must turn to two sources: internal - the savings of the nation - and external - borrowing from abroad.

(1) Internal Finance: The proportion of savings to aggregate income varies from country to country and from period to period. We shall however, be near the mark if we assume a saving of 8% of our national income under "Laissez Faire". According to Dr. M.A. Anis⁽¹⁾ our national income of 1945 was

(1) M.A. Anis "The National Income output and expenditure of Egypt for the years 1937-45."

502 million pounds. Internal savings at 8% would have provided in ten years only 4016. This is a small proportion of our total capital needs over a period of ten years and even if we obtained 50% of our requirement from abroad our capacity to save would amount to less than 50% of what we must have from internal resources. It is noteworthy, however, that during the ten years to come, the defence programme in Egypt will increase. This is a severe obligation, but nevertheless it is not a decisive element in the general consideration of the shortage of capital, although it must be a matter of continuing concern and should be reduced as soon as international conditions permit. At any rate the organization and stimulus of savings must be carried further in Egypt. Of course there are practical problems in the country which aggravate the difficulty - first and foremost the relatively small urban population. It is usually argued that it is relatively easy in the towns to organise the apparatus of savings banks and similar agencies which are necessary to encourage thrift among the people; in the villages and rural areas the task of organization is much more arduous.

(2) External Finance: Egypt is already receiving external finance, primarily through the release of sterling balances. The acceleration of

development work will require additional external finance, but no estimate can be given of the amount needed from abroad in view of the general instability of world economics as well as the uncertain elements in the development programme considered in the previous chapters. All that can be said, at present, is that the need for external finance cannot be measured by the cost of imports of capital goods. Consumer goods as well as capital goods are needed to carry the programme through.

It is worth mentioning here, however, that the need for external finance arises from the size of our balance of payments deficit which is required in order to permit the development programmes to be carried through. The criteria to be adopted are therefore to be found firstly in the soundness of the development programmes themselves, and secondly in the extent to which a balance of payments deficit is necessary in order to provide the external resources to support the economics of development.

The possible channels of external finance may be as follows:

1. Out of the overseas assets which Egypt possesses, i.e. the sterling balances which the country built up in London during the last war. The sterling
(1)
accounts in December 1949 were 225.9 million and

(1) A.E. Hassan "The problem of Sterling Balances". the Bulletin No. 45. (May, June 1950)

if this were paid off in ten years' time the amount for every year would represent little over 25 million pounds which is about 5 per cent of Egypt's national income. This will mean that the United Kingdom will ultimately have to supply goods to this value from her own production, thus, in effect, repaying in kind a further instalment of her wartime debt.

2. Out of money put up by private investors abroad for use by private enterprise in the country. It is too early to say how much may be expected from this source; but the opportunities for private enterprise in Egypt should increase as the development programmes get under way.

3. Out of money lent by private investors abroad to the government. There is a prospect of substantial loans to the government from American firms. In the London market the demand for loans is likely to exceed the supply for some years ahead. Borrowing by the Egyptian Government from private investors abroad was the principal source of finance for developments in the second half of the nineteenth century, and there is scope for an expansion of governmental borrowing in other capital exporting countries besides America.

4. Out of gifts and loans from governments abroad. According to President Truman's fourth point for the under-developed countries, Egypt will receive

goods and services with 150 million dollars in 1951 - the details of this agreement are not known yet.⁽¹⁾

5. Out of loans from the International Bank for Reconstruction and Development. This is a very important source of funds, and it is greatly hoped that the Bank will consider the possibility of offering loans for development in Egypt. This will depend upon the presentation of carefully prepared plans for development for which elements may be selected as offering particularly suitable openings for substantial assistance from the Bank. Indeed the present writer believes that Egypt can go further ahead in borrowing from the International Bank. In this respect the country enjoys many advantages over other internationally depressed areas. The Egyptian reserve fund for example, though depleted by the pre-war deficits, stands at the figure of £28,213,000. It is however, to a very large extent an untouchable reserve.

These are the five possible channels for external finance required for Egypt's population

(1) Halford L. Hoskins "Point four with reference to the Middle East" vol. 268 of the Annals of American Academy of Political Science.

policy. But the task for providing this financial support is manifestly not one that can be tackled by Egypt alone. The need to raise the standard of living in Egypt is a problem of concern to every country in the Middle East, not only as an end in itself, but also because the political stability of the area and its economic progress are of vital concern to the world as a whole.

CHAPTER 17.

ADMINISTRATION and RESEARCH

Review of recommendations - the responsible minister - Organization at the centre: commission on population studies; an institute of population research.

Administration and Research.

The measures suggested in this thesis reflect enough of the broad implications of population policy to present very diverse administrative problems and to concern a variety of Government departments.

Review of recommendations:

Several proposals can, it is true, be grouped together as concerned with reduction of births. First it is particularly desirable to spread birth-control propaganda all over the country, so long as there is no law against such propagation or against the dissemination of knowledge on the methods of contraception. Secondly birth-control clinics should be opened as soon as possible. Rational contraceptive advice should be a part of the public health programme; and lastly instruction in many of the subtleties of normal sex-life and physiological and psychological aspects of birth-control should be named in the syllabus of Egyptian Medical Faculties.

The encouragement of birth restriction would involve the introduction of restrictive legislation to restrict propagation of the unfit, limit free social services and raise the age of marriage.

As to the encouragement of emigration to Iraq

and Sudan, it would involve particularly the Ministry of Social Affairs (the Labour Department) the Ministry of Interior and the Under-Secretary of the Sudan. All these Ministries must collaborate and co-ordinate their efforts for a unified policy aimed at encouraging emigration from Egypt to these under-populated areas.

A whole programme of developing Egypt's economic resources was also suggested as well as a committee to estimate the required capital for the economic development. Though some of the measures suggested should be introduced immediately, the timing of others must depend on Egypt's budgetary situation.

The responsible minister:

The creation of a new ministry of population would be of benefit in directing attention to the country's great problem in this respect. But in consideration of practical difficulties such a ministry would not on the whole be desirable.

Problems of population is so extensive that the duties of a minister responsible solely for it would overlap those of many others; such as the Ministry of Health, the Ministry of Social Affairs; the Ministry of Finance; the Sudan Agency and the newly created Ministry of National Economy⁽¹⁾

(1) This Ministry was created by the present Wafdist government in early 1950.

What is really needed is that existing Ministries should carry out their functions with greater efficiency than at present - for example a census population was carried out in 1947 but the detailed statistics collected in connection with it have not to this day been published. The handicap that this delay represents for students and would be reformers is obvious.

Beyond this a consciousness of the importance and urgency of the population problem and greater, more willing and more active co-operation between the various departments concerned would bring about the results we wish for.

Organization at the centre.

It is of the first importance that our population policy should henceforth be in the hands of a competent and specialized body, and that the phenomena governing the population policy should be constantly and vigilantly studied. For this reason the present writer recommends that: (A) An institute for research into the phenomena of population trends shall be established, which will serve not only for the collection of scientific data but to keep the public constantly aware of the importance of the population problem: (B) A Governmental Department shall be set up within the Ministry of National Economy to supervise the carrying out of the institute's recommendations.

A. An Institute of Population Research:

In the various parts of this thesis the writer recommends a number of special studies which may help in solving the problem of population in Egypt. Nevertheless, the results of such studies cannot provide a final solution for such a problem because of the difficulty of its nature. Such difficulty arises not only from its highly complex character⁽¹⁾ but also because of the obscurity in which it is wrapped. This obscurity concerns both the quantitative and the qualitative factors which one will be speculating in its causes and effects.

Elementary data concerning birth-control does not exist, nor have we any measure of estimating the relative strength of the various factors of over-population in Egypt. It may be added that the results of the very limited number of population studies published in Egypt during the last two decades cannot provide a "once for all" solution of the population; because the problem is in process of continuous change, with changes in family relationship, in outlook, and in external influences such as housing, education and economic conditions.

Thus a constructive policy will be required -

(1) The science of demography in itself is still far from fully developed. (See Pep's Report on Population - p. 218)

both for its formulation and application. There is need of much fuller knowledge of the facts about population both in Egypt and in the various countries of the Middle East. There is no sphere of effective governmental action more dependent upon knowledge than in this complex and obscure field. Therefore the writer proposes that an institute of population research should be established at the earliest possible moment to conduct research into all aspects of population - economic, medical, biological and social. (1)

The institute should be placed under the auspices of Fouad the first University of Cairo and directed by a council analogous to the Egyptian research for the development of industry. (2)

The creation of such an institute will be most effective in impressing upon public opinion the importance of the issue. We have an illuminating precedent in this respect. In 1937 the school of Social Work was founded in Cairo. Within two years as a result of the accurate studies it circulated and the ideas it propogated, a Ministry of Social Affairs was created.

(1) In Egypt at the present time, the vast problem of population are studied in a very narrow context as part of Economic Geography and Social Econ. at Fouad the 1st University - Cairo.

(2) For further information of this council see "The Bulletin" of February, 1950 p. 5.

Thereafter successive reforms were initiated to combat poverty, ignorance and disease.

The work of this institute may be as follows:-

(1) To carry out research work concerning the population problem in Egypt.

- a. Composition of population (Sex, age, occupation, etc.)
- b. The distribution of the population.
 - 1. By locality, industry and its internal migration.
 - 2. Concentration of population in towns and cities.
- c. Investigation into the growth of population.
 - 1. Natural increase of population.
 - 2. Birth-rates and death-rates.
 - 3. Marriage-rates and Divorce-rates.

(2) Investigation into population problems and measures to be taken for their solution:

- a. Investigation concerning surplus population.
- b. Relation between surplus population and unemployment.

(3) Investigations concerning the control of population.

- a. Birth-control.
- b. Emigration.
- c. Eugenic study of population.

(4) Investigations into general measures to be taken for the solution of population problems.

Besides the above-mentioned subjects of investigation the institute ought to take note of current thoughts regarding population problems both

domestic and foreign. It is also of great benefit that the institute should hold public lecture-meetings from time to time for the purpose of diffusing knowledge on population problems and to accelerate the adoption of population measures.

The institute's governing body must comprise university professors, research workers and government officials. It must be given facilities as regards finance and red tape must not be allowed to slow down its work. It will be responsible directly to the Council of Ministers; and its budget must not come under any particular Ministry.

This governing body may be entrusted with the following duties:

- (1) The supervision of courses of study.
- (2) The drawing up of regulations governing the curriculum, admission of students to the institute and the employment of both technical and administrative officials for the institute.
- (3) The organization of the research work and extra lectures by experts in addition to the prescribed courses.

Finally we must emphasize that nothing should be allowed to stand in the way of the creation of such an institute - neither material obstacles, nor the shortage of experts qualified to deal with population problems. In the latter case, we may for some time have to engage foreign experts and

send student missions abroad until we have our own professors training our own men.

B. A Governmental Department for Population:

The importance of this department will be its association with the proposed institute, since it seems to be desirable to bring action the analysis of vital statistics and the investigation of the social, economic and other problems involved in the trend of population.

The analysis of vital statistics not only gives a picture of what is happening in the trend of population but it also points to the causes and to the subjects for investigation. Thus analysis may show for example an increase of child mortality in the country as a whole or in certain localities; this will lead to remedying the matter by carrying out medical or economic or other necessary researches.

The department should also have the duty of preparing for presentation to Parliament a comprehensive annual report, which would both review the year's events in the various spheres of population policy and discuss long-term trends. The report should be discussed in Parliament, so that an opportunity would be given for a general debate, in which the government's population policy would be explained and defended. It might be desirable to provide a further stimulus to public interest by publishing

the report also in a second and more popular form.

As to the relations between the proposed department and other governmental departments, the writer believes that a policy of collaboration rather than sharp distinction of function should be followed. A similar collaboration will be welcomed between this department and the international specialized agencies of the United Nations Organization.(1)

(1) Such as The "International Labour Organization" the Food and Agricultural Organization" the "Unesco" and the "World Health Organization".

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